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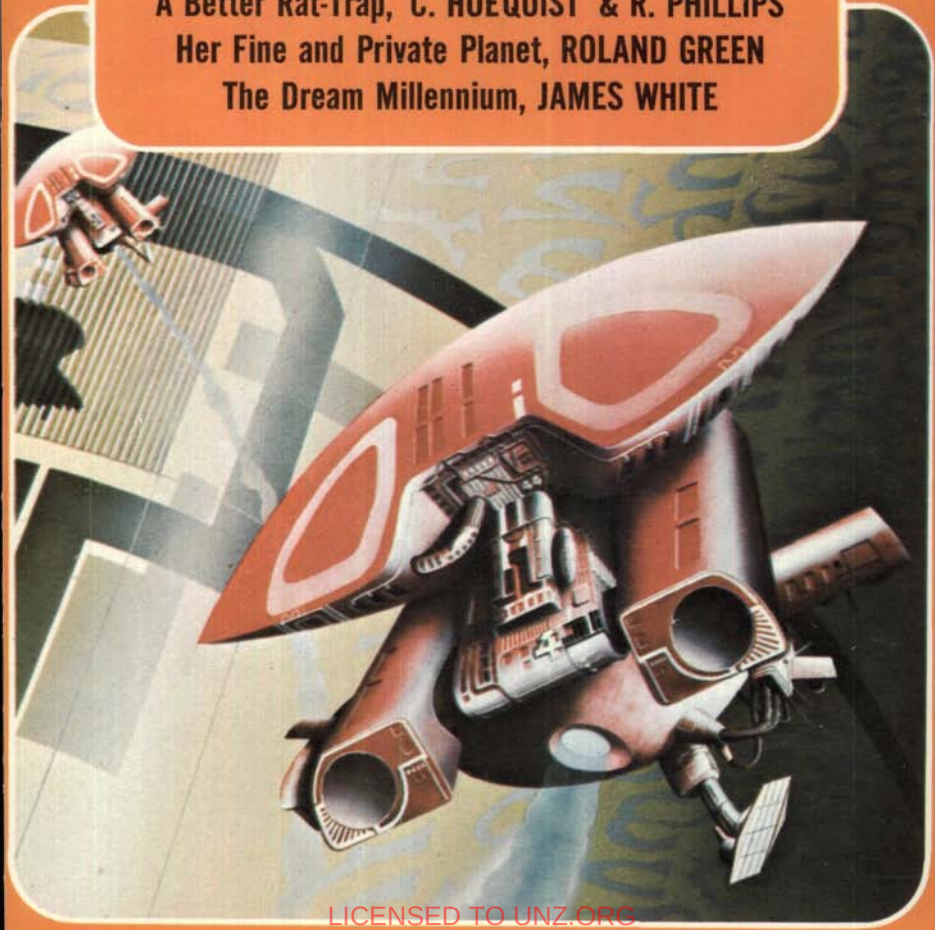

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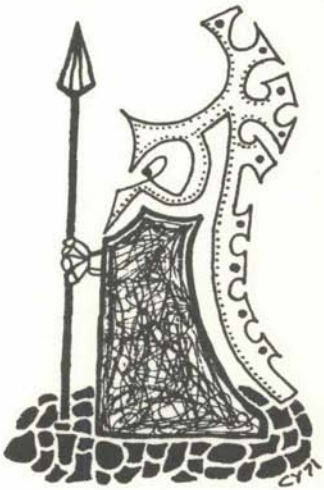

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DECEMBER 1973
Vol. 34, No. 3

Galaxy
SCIENCE FICTION
MAGAZINE

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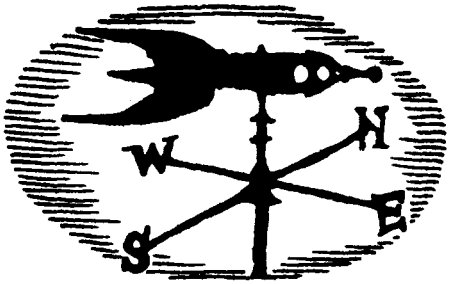

DIRECTIONS

Directions:

Re: Directions *in the May '73 issue—this man, Dave Wise, must look upon rhinestones with shuddering disaste, wondering in his high-falutin' heart of hearts how come they come to be, since nothing less than diamonds have any right to be.*

I am simply weary up to my cerebral cortex of pseudo-intellectualism as practiced by people who put on a posture of denying ordinariness, which is the state in which most of us exist.

We are not moronic because our depths are seldom plumbed by eight hours a day of earning our living at desks covered with paper, at machines making other machines, at cash registers, typewriters or gas pumps, in trucks, taxis and bulldozers, and so on. The depths are there, to be called on when the occasion warrants, and most of us in this country are well enough educated to understand the truly great works of social significance, but we are not so constituted as to seek surcease from our daily treadmills in the unrelieved perusal of tales of intolerance, inhumanity, greed, revenge, irresponsibility in high places and all the other moral shortcomings of man. We know only too well that they exist.

Rhinestones are very pretty on the gal who works all day, for instance, as a grocery checker. She may also enjoy reading Gordon Dickson's Dorsai stories, Andre Norton's witch series, E. C. Tubbs' Dumerest stories, Anne McCaffrey's dragon tales, et al. She is happy with one-dimensional characterizations as long as they are larger than life in nobility and determination to change a world (or even a universe) situation for the better. She is grateful for the imagination and ability of the authors who entertain her. She knows about Dickens, Joyce and Melville, but a few pages of Dickens, Joyce or Melville are not conducive to relaxation after eight hours on her feet slinging groceries around. Intolerance and insensitivity glare at her all day; she does not want them in her dreams.

Science fiction need not aspire to be a creative field in parallel significance to the works of Dostoievsky, Plato, Chekov, Mann, Dante and the aforementioned Dickens, Joyce and Melville. Science fiction is doing a tremendous service as is, and it will be beloved by more and more thousands of ordinary daily-bread people, though they may not be articulate about it.

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Sebie D. Landers
Burbank, California

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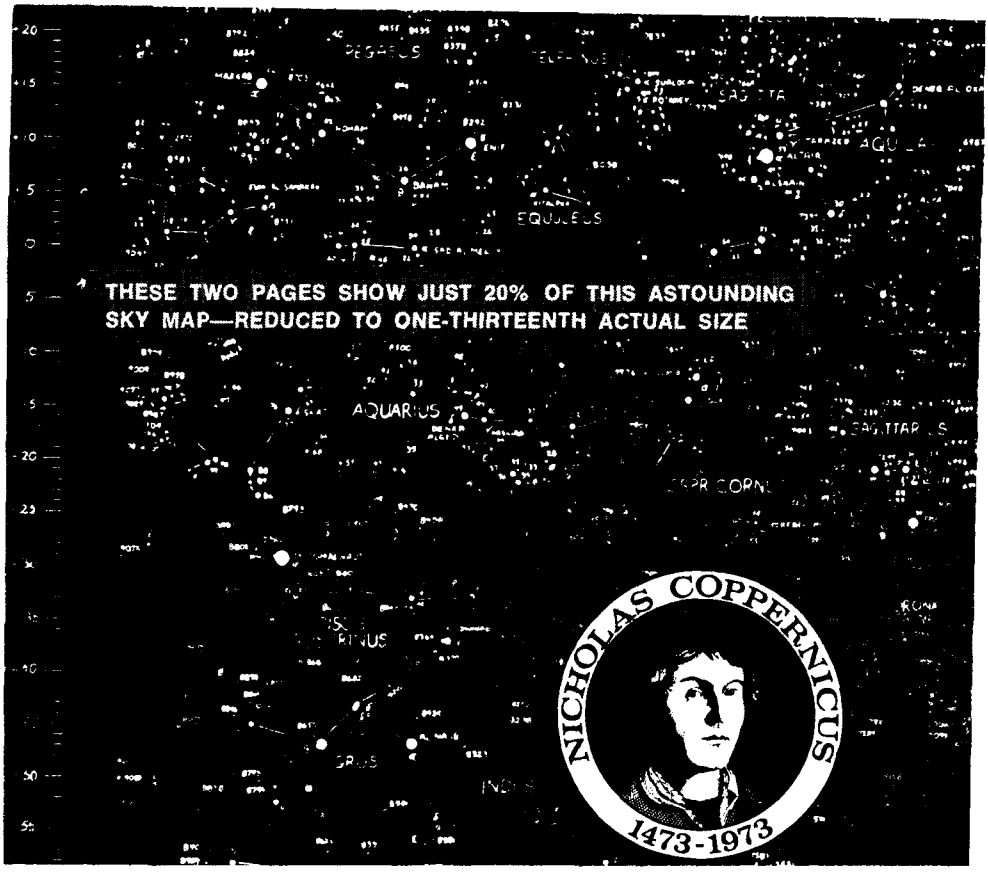

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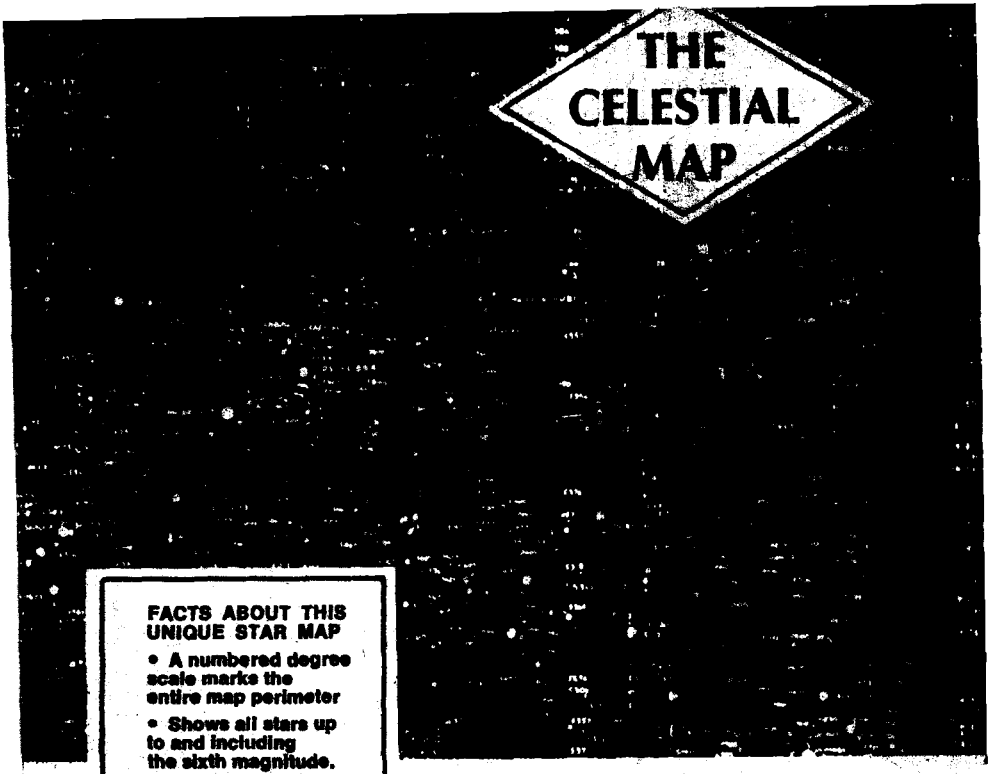

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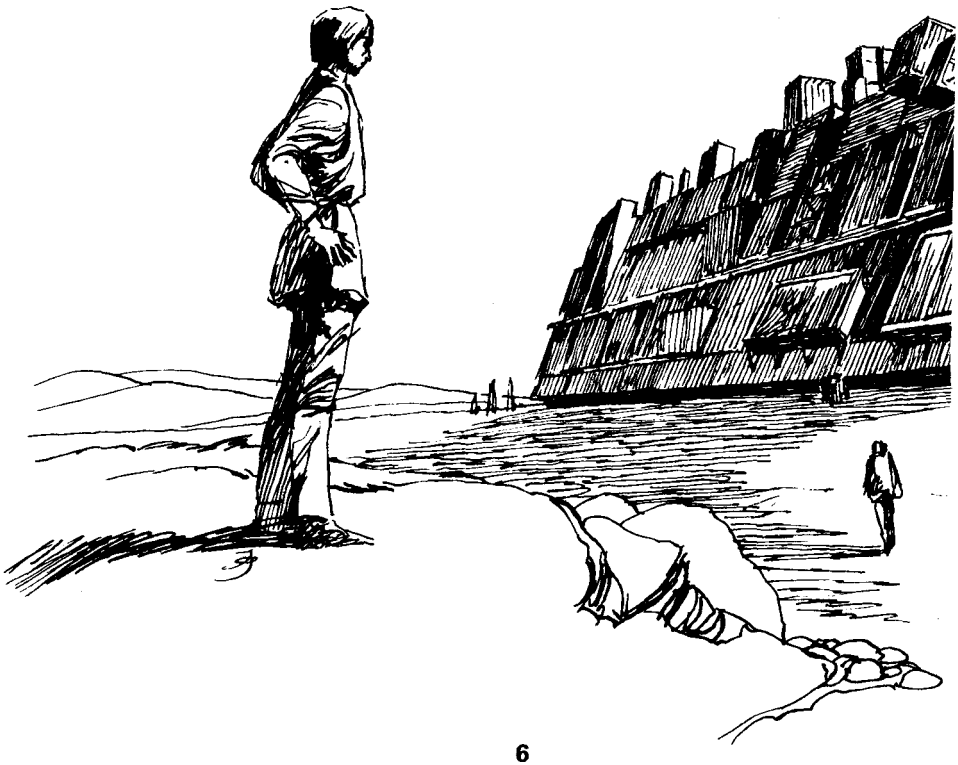
His name was Helward Mann—and he was the last human hope for a future!

INVERTED WORLD

CHRISTOPHER PRIEST



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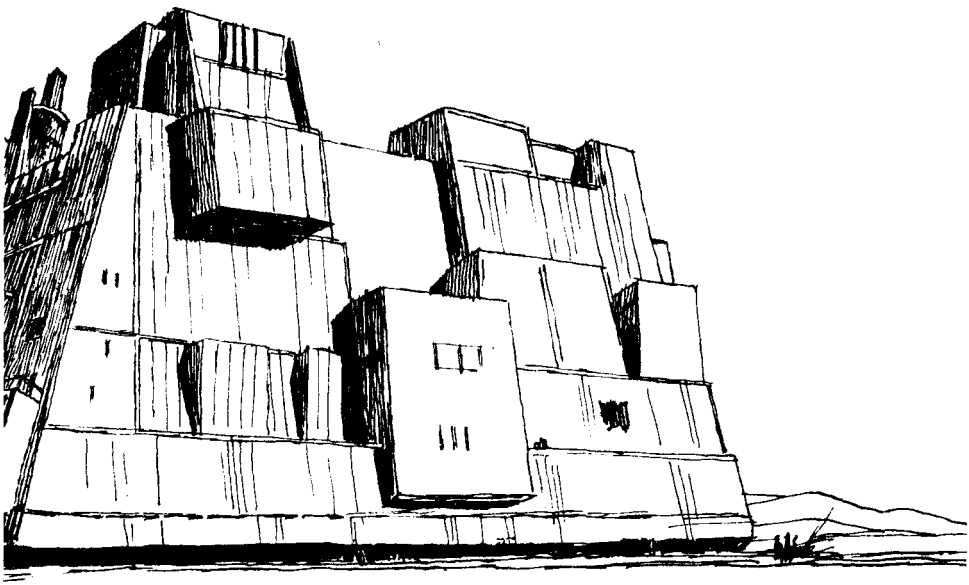

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I

I HAD reached the age of six hundred and fifty miles. Beyond the door the guildsmen were assembling for the ceremony in which I would be admitted as a guild apprentice. It was a moment of excitement and apprehension, a concentration into a few minutes of all that my life had been until then.

My father was a guildsman and I had always seen his life from a certain remove. I regarded it as an enthralling existence, charged with purpose, ceremony and responsibility—he told me nothing of his life or work, but his uniform, his vague manner and his frequent absences from the city hinted at a preoccupation with matters of utmost importance.

Within a few minutes the way would be open for me to join that life. It was an honor and a donning of responsibility and no boy who had grown up inside the confining walls of the creche could fail to respond to the thrill of this major step.

The creche itself was a small building at the very south of the city. It was almost totally enclosed—a warren of corridors, rooms and halls. There was no access to the rest of the city, except by way of a door that was normally locked, and the only opportunities for exercise existed in the small gymnasium and a tiny open space, bounded on all four sides by high walls.

Like the other children I had been placed in the charge of the creche administrators soon after my birth and knew no other world. I had no memories of my mother—she had left the city soon after my birth.

It had been a dull but not unhappy experience. I had made some good friends and one of them—a boy a few miles older than I called Gelman Jase—had become an apprentice guildsman a short time before me. I was looking forward to seeing Jase again. I had seen him once since his coming of age, when he returned briefly to the creche, and already he had adopted the slightly preoccupied manner of the guildsmen and I had learned nothing from him. Now that I, too, was about to become an apprentice I felt that he would have much to tell me.

The administrator returned to the anteroom where I was standing.

"They're ready," he said. "Can you remember what you have to do?"

"Yes."

"Good luck."

I discovered that I was trembling and the palms of my hands were moist. The administrator, who had brought me from the creche that morning, grinned at me in sympathy. He thought he understood the ordeal I was suffering, but he knew, literally, only half of it.

After the guild ceremony more was in store for me. My father had told me that he had arranged a marriage for me. I had taken the news calmly because I knew that

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guildsmen were expected to marry early and I already knew the chosen girl. She was Victoria Lerouex and she and I had grown up together in the creche. I had not had much to do with her—there were not many girls in the creche and they tended to keep together in a tight-knit group—but we were less than strangers. Even so, the notion of being married was a new one and I had not had much time to prepare myself mentally for it.

The administrator glanced up at the clock.

"Okay, Helward. It's time."

We shook hands briefly and he opened the door. He walked into the hall, leaving the door open. Through it I could see several of the guildsmen standing on the main floor. The ceiling lights were on.

The administrator stopped just beyond the door and turned to address the platform.

"My Lord Navigator. I seek audience."

"Identify yourself." A distant voice. From where I was standing in the anteroom I could not see the speaker.

"I am Domestic Administrator Bruch. At the command of my chief administrator I have summoned one Helward Mann, who seeks apprenticeship in a guild of the first order."

"I recognize you, Bruch. You may admit the apprentice."

Bruch turned and faced me and, as he had earlier rehearsed me, I stepped forward into the hall. In the center of the floor a small podium had been placed and I walked over and took up position behind it.

I faced the platform.

IN THE concentrated brilliance of the spotlights sat an elderly man in a high-backed chair. He was wearing a black cloak decorated with a circle of white stitched on the breast. On each side of him stood three men, all wearing cloaks, but each of these was decorated with a sash of a different color. Gathered on the main floor of the hall, in front of the platform, were several other men and a few women. My father was among them.

Everyone was looking at me and I felt my nervousness increase. My mind went blank and all Bruch's careful rehearsals were forgotten.

In the silence that followed my entrance I stared straight ahead at the man sitting at the center of the platform. This was the first time I had even seen—let alone been in the company of—a Navigator. In my immediate background of the creche such men had sometimes been spoken of in a deferential way, sometimes—by the more disrespectful—in a derisive way, but always with undertones of awe for the almost legendary figures. That one was here at all only underlined the importance of this ceremony. My immediate thought was that what a story this would be to tell the others—and then I remembered that from this day nothing would be the same again.

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Bruch had stepped forward to face me.

"Are you Helward Mann, sir?"

"Yes, I am."

"What age have you attained, sir?"

"Six hundred and fifty miles."

"Are you aware of the significance of this age?"

"I assume the responsibilities of an adult."

"How best can you assume those responsibilities, sir?"

"I wish to enter apprenticeship with a first-order guild of my choice."

"Have you made that choice, sir?"

"Yes, I have."

Bruch turned and addressed the platform. He repeated the content of my answers to the men assembled there, though it seemed to me that they must have been able to hear my answers as I gave them.

"Does anyone wish to question the apprentice?" said the Navigator to the other men on the platform.

No one replied.

"Very well." The Navigator stood up. "Come forward, Helward Mann, and stand where I can see you."

Bruch stepped to one side. I left the podium and walked forward to where a small white plastic circle had been inlaid into the carpet. I stopped with my feet in the center of it. For several seconds I was regarded in silence.

The Navigator turned to one of the men at his side.

"Do we have the proposers here?"

"Yes, My Lord."

"Very well. As this is a guild matter we must exclude all others."

The Navigator sat down and the man immediately to his right stepped forward.

"Is there any man here who does not rank with the first order? If so, he will grace us with his absence."

Slightly behind me, and to one side of me, I noticed Bruch make a slight bow toward the platform. Then he left the hall. He was not alone. Of the group of people on the main floor of the hall, about a half left the room by one or other of the exits. Those remaining turned to face me.

"DO WE recognize strangers?" said the man on the platform. There was silence. "Apprentice Helward Mann, you are now in the exclusive company of first-order guildsmen. A gathering such as this is not common in the city and you should treat it with appropriate solemnity. It is in your honor. When you have passed through your apprenticeship these people will be your peers and you will be bound, just as they are, by guild rules. Is that understood?"

"Yes, sir."

"You have selected the guild you wish to enter. Please name it for all to hear."

"I wish to become a Future Surveyor," I said.

"Very well, that is acceptable. I am Future Surveyor Clausewitz and I am your chief guildsman. Standing

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around you are other Future Surveyors, as well as representatives from other first-order guilds. Here on the platform are the other chief guildsmen of the first order. In the center, we are honored by the presence of Lord Navigator Olsson."

As Bruch had earlier rehearsed me I made a deep bow toward the Navigator. The bow was all I now remembered of his instructions—he had told me that he knew nothing of the details of this part of the ceremony, only that I should display appropriate respect toward the Navigator when formally introduced to him.

"Do we have a proposer for the apprentice?"

"Sire, I wish to propose him." It was my father who spoke.

"Future Surveyor Mann has proposed. Do we have a seconder?"

"Sir, I will second the proposal."

"Bridge-builder Lerouex has seconded. Do we hear any dissent?"

There was a long silence. Twice more Clausewitz called for dissent, but no one raised any objection to me.

"That is as it should be," said Clausewitz. "Helward Mann, I now offer you the oath of a first-order guild. You may—even at this late stage—decline to take it. If, however, you do swear to the oath you will be bound to it for the whole of the rest of your life in the city. The penalty for breaching the oath is summary execution. Is that absolutely clear in your mind?"

I was stunned by this. Nothing anyone had said—my father, Jase or even Bruch—had warned me of it. Perhaps Bruch had not known . . . but surely my father would have told me?

"Well?"

"Do I have to decide now, sir?"

"Yes."

It was quite clear that I would not be allowed to know the oath before deciding. Its content was no doubt absolutely vital to the secrecy. I felt that I had very little alternative. I had come this far and already I could feel the pressures of the system about me. To proceed as far as this—proposal and acceptance—and then to decline the oath was impossible, or so it seemed to me at that moment.

"I will take the oath, sir."

Clausewitz stepped down from the platform, walked over to me and handed me a piece of white card.

"Read this clearly and loudly," he told me. "You may read it through to yourself first if you wish, but if you do so you will be immediately bound by it."

I nodded to show my understanding of this and he returned to the stage. The Navigator stood up. I read the oath silently, familiarizing myself with its phrases.

I faced the platform, aware of the attention of the others on me, not least that of my father.

"I, Helward Mann, being a responsible adult and a citizen of Earth do solemnly swear:

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"That as an apprentice to the guild of Future Surveyors I shall discharge whatever tasks I am given with the utmost effort;

"That I shall place the security of the city of Earth above all other concerns;

"That I shall discuss the affairs of my guild and other first-order guilds with no one who is not himself an accredited and sworn apprentice or a first-order guildsman;

"That whatsoever I shall experience or see of the world beyond the city of Earth will be considered a matter of guild security;

"That on acceptance as a full guildsman I shall apprise myself of the contents of the document known as Destaine's Directive, and that I shall make it my duty to obey its instructions, and that further I shall pass on the knowledge obtained from it to future generations of guildsmen;

"That the swearing of this oath shall be considered a matter of guild security.

"All this is sworn in the full knowledge that a betrayal of any one of these conditions shall lead to my summary death at the hands of my fellow guildsmen."

I LOOKED up at Clausewitz as I finished speaking. The very act of reading those words had filled me with an excitement I could hardly contain. *Beyond the city* . . . That meant I would leave the city, venture as an apprentice into the very regions which had been forbidden to me and were even yet forbidden to most of those in the city. The creche was full of rumors about what lay outside the city and already I had any number of wild imaginings about it. I was sensible enough to realize that the reality could never equal those rumors for inventiveness, but even so the prospect was one that dazzled and appalled me. The cloak of secrecy that the guildsmen placed around it seemed to imply that something dreadful was beyond the walls of the city—so dreadful that a penalty of death was the price paid for revealing its nature.

Clausewitz said: "Step up to the platform, Apprentice Mann."

I walked forward, climbing the four steps that led up to the stage. Clausewitz greeted me, shaking me by the hand and taking away from me the card with the oath. I was introduced first to the Navigator, who spoke a few amiable words to me, and then to the other chief guildsmen. Clausewitz told me not only their names but also their titles, some of which were new to me. I was beginning to feel overwhelmed by all the information. I was learning in a few moments as much as I had learned inside the creche in all my life to date.

There were six first-order guilds. In addition to Clausewitz's Future Surveyors guild there was a guild responsible for Traction, another for Track-laying and another for Bridge-building. I was told that these were the guilds primarily responsible for

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the administration of the city's continued existence. In support of these were two further guilds: Militia and Barter. All this was new to me, but now I recalled that my father had sometimes referred in passing to men who bore as titles the names of their guilds. I had heard of the Bridge-builders, for instance, but until this ceremony I had had no conception that the building of a bridge was an event surrounded by an aura of ritual and secrecy. How was a bridge fundamental to the city's survival? Why was a militia necessary?

Indeed, what was the future?

I WAS taken by Clausewitz to meet the Future guildsmen, among them of course my father. Only three were present—the rest, I was told, were away from the city. With these introductions finished I spoke to the other guildsmen, there being at least one representative from each of the first-order guilds. I was gaining the impression that the work of a guildsman outside the city was a major occupier of time and resources. On several occasions one or another of the guildsmen would apologize for there being no more of their number at the ceremony. They were away from the city.

During these conversations one unusual fact struck me. It was something that I had noticed earlier, but had not registered consciously. This was that my father and the other Future guildsmen appeared to be

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considerably older than the others. Clausewitz himself was strongly built and he stood magnificent in his cloak, but the thinness of his hair and his lined face betrayed a considerable age—I estimated him to be at least two thousand five hundred miles old. My father, too, now I could see him in the company of his contemporaries, seemed remarkably old. He was of an age similar to Clausewitz and yet logic denied this. It would mean that my father would have been about eighteen hundred miles at the time I was born and I already knew that it was the custom in the city to produce children as soon after reaching maturity as possible.

The other guildsmen were considerably younger. Some were evidently only a few miles older than myself—a fact that gave me some encouragement. Now that I had entered the adult world I wished to be finished with the apprenticeship at the earliest opportunity. The implication was that the apprenticeship had no fixed term and if, as Bruch had said, status in the city was a result of ability, then with application I could become a full guildsman within a relatively short period of time.

There was one person missing whom I would have liked to see there. That was Jase.

Speaking to one of the Traction guildsmen, I asked after him.

"Gelman Jase?" he said. "I think he's away from the city."

"Couldn't he have come back for

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this?" I said. "We shared a cabin in the creche."

"Jase will be away for many miles to come."

"Where is he?"

The guildsman only smiled at this, infuriating me—for surely, now I had taken the oath, I could be told?

Later I noticed that no other apprentices were present. Were they all away from the city? If so, that probably meant that very soon I, too, could leave.

After a few minutes of talking to the guildsmen Clausewitz called for attention.

"I propose to recall the administrators," he said. "Are there any objections?"

A sound of general approval came from the guildsmen.

"In which case," Clausewitz continued, "I would remind the apprentice that this is the first occasion of many on which he is bound by his oath."

CLAUSEWITZ moved down from the platform and two or three of the guildsmen opened the doors of the hall. Slowly the other people returned to the ceremony. Now the atmosphere lightened considerably. As the hall filled up I heard laughter and in the background I noticed that a long table was being set up. There seemed to be no rancor from the administrators about their exclusion from the ceremony that had just taken place. I assumed that the event was common enough to be taken as a matter of course, but it crossed my mind to wonder how much they were able to surmise. When secrecy takes place in the open, as it were, it lays itself open to speculation. Surely no security could be so tight that merely dismissing them from a room while an oath-taking ceremony took place would keep people in the dark as to what was happening? As far as I could tell, there had been no guards at the door—what would have prevented someone from eavesdropping while I spoke the oath?

I had little time to consider this, for the room was filled with activity. People spoke together in an animated way and there was much noise as the long table was laid with large plates of food and many different kinds of drink. I was led from one group of people to another by my father and was introduced to so many people that I was soon unable to remember names or titles.

"Shouldn't you introduce me to Victoria's parents?" I asked, seeing Bridge-builder Lerouex standing to one side with a woman administrator whom I assumed to be his wife.

"No—that comes later." He led me on and soon I was shaking hands with yet another group of people.

I was wondering where Victoria was, for surely now that the guild ceremony was out of the way our engagement should be announced. By now I was looking forward to seeing her, partly from curiosity, but also because she was someone I already knew. I felt outnumbered by

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people both older and more experienced than I and Victoria was a contemporary. She, too, was of the creche; she had known the same people as I and was of a similar age. In this room full of guildsmen she would have been a welcome reminder of what was now behind me. I had taken the major step into adulthood and that was enough for one day.

Time passed. I had not eaten since Bruch had woken me and the sight of the food reminded me of how hungry I was. My attention was drifting away from the more social aspects of the ceremony—it was all too much at once. For another half-hour I followed my father around, talking without much interest to the people to whom I was introduced, but what I would really have welcomed at that moment was some time to myself so that I could eat—and think over all that I had learned.

Eventually my father left me talking to a group of people from the synthetics administration (the group which, I learned, was responsible for the production of all the various synthetic foods and organic materials used in the city) and moved over to where Lerouex was standing. I saw them speak together briefly and Lerouex nodded.

In a moment my father returned and took me to one side.

"Wait here, Helward," he said. "I'm going to announce your engagement. When Victoria comes into the room, come over to me."

He hurried away and spoke to Clausewitz. The Navigator returned to his seat on the platform.

"Guildsmen and administrators!" Clausewitz called over the noise of the conversations. "We have a further celebration to announce. The new apprentice is to be engaged to the daughter of Bridge-builder Lerouex. Future Surveyor Mann, would you care to speak?"

My father walked to the front of the hall and stood before the platform. Speaking too quickly, he made a short speech about me. On top of everything else that had happened that morning this came as a new embarrassment. Uneasy together, my father and I had never been as close as he made out by his words. I wanted to stop him, wanted to leave the room until he had finished, but it was clear I was still the center of interest. I wondered if the guildsmen had any idea of how they were alienating me from their sense of ceremony and occasion.

My father finished, but stayed in front of the platform. From another part of the hall Lerouex said that he wished to present his daughter. A door opened and Victoria came in, led by her mother.

As my father had instructed I walked over and joined him. He shook me by the hand. Lerouex kissed Victoria. My father kissed her and presented her with a finger ring. Another speech was made. Eventually, I was introduced to her. We had no chance to speak together.

The festivities continued.

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II

I WAS given a key to the creche, told that I might continue to use my cabin until accommodation could be found in guild quarters and reminded once more of my oath. I went straight to sleep.

I was awakened early by one of the guildsmen I had met the previous day. His name was Future Denton. He waited while I dressed myself in my new apprentice's uniform and then led me out of the creche. We did not take the same route as that along which Bruch had led me the day before, but climbed a series of stairs. The city was quiet. Passing a clock I saw that the time was still very early indeed, just after three-thirty in the morning. The corridors were empty of people and most of the ceiling lights were dimmed.

We came eventually to a spiral staircase, at the top of which was a heavy steel door. Future Denton took a flashlight from his pocket and switched it on. There were two locks to the door and as he opened it he indicated that I should step through before him.

I emerged into cold and darkness, such extremes of both that they came as a physical shock. Denton closed the door behind him and locked it again. As he shone his flashlight around I saw that we were standing on a small platform, enclosed by a handrail about three feet high. We walked over and stood at the rail. Denton switched off his light

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and the darkness was complete.

"Where are we?" I asked.

"Don't talk. Wait—and keep watching."

I could see absolutely nothing. My eyes, still adjusted to the comparative brightness of the corridors, tricked my senses into detecting colored shapes moving about me, but in a moment these stilled. The darkness was not the major preoccupation—already the movement of the cold air across my body had chilled me and I was trembling. I could feel the steel of the rail in my grip like a spear of ice and moved my hands, trying to minimize the discomfort. It was not possible to let go, though. In that absolute dark the rail was my only hold on the familiar. I had never before been so isolated from what I knew, never before been confronted with such an impact of things unknown. My whole body was tense, as if bracing itself against some sudden detonation or physical shock, but none came. All about me was cold and dark and overwhelmingly silent, barring the sound of the wind in my ears.

As the minutes passed—and my eyes became better able to adjust—I discovered I could make out vague shapes about me. I could see Future Denton beside me, a tall black figure in his cloak, outlined against the lesser darkness of what was above him. Beneath the platform on which we stood I could detect a huge, irregularly shaped structure, black and black on black.

Around all this was impenetrable darkness. I had no point of reference, nothing against which I could make distinctions of form or outline. It was frightening, but in a way that struck emotionally, not in such a way that I felt at all threatened physically. Sometimes I had dreamed of such a place and then had awakened, still experiencing the after-images of an impression such as this. This was no dream—the bitter cold could not be imagined, nor could the startling clarity of the new sensations of space and dimension. I knew only that this was my first venture outside the city—for this was all it could be—and that it was nothing like I had ever anticipated.

When I fully appreciated that fact the effect of the cold and dark on my orientation became of subsidiary importance. I was outside. *This* was what I had been waiting for!

There was no further need for Denton's admonition to silence. I could say nothing and had I tried the words would have died in my throat or been lost on the wind. It was all I could do to look—and in looking I saw nothing but a deep, mysterious endlessness shrouded by the clouded night.

A NEW sensation affected me: I could smell the soil! It was unlike anything I had ever smelled in the city and my mind conjured a spurious image of many square miles

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of rich brown soil, moist in the night. I had no way of telling what it was I was actually smelling—it was probably not soil at all—but this image of rich, fertile ground had been one that endured for me from one of the books I had read in the creche. It was enough to imagine it and once more my spirits rose as I sensed the cleansing effect of the wild, unexplored land beyond the city. There was so much to see and do—and even yet, standing on the platform, everything remained for these few precious moments the exclusive domain of the imagination. I needed to see nothing—the simple impact of this fundamental step beyond the city's confines was enough to spark my underdeveloped imagination into realms which until that moment had been fed only by the writings of the authors I had read.

Slowly the blackness became less dense, until the sky above me was a dark gray. In the far distance I could see where the clouds met the horizon and even as I watched I saw a line of the faintest red begin to etch the shape of one small cloud. As if the impact of the light were propelling it this cloud and all the others were moving slowly above us, borne on the wind away from the direction of the glow. The redness spread, touching the clouds for a few moments as they moved away, leaving behind a large area of clear sky, which was itself colored a deep orange. My whole attention was riveted on this sight, for it was quite simply the most beautiful thing I had experienced in my whole life. Almost imperceptibly the orange was spreading and lightening—still the clouds were singed with red, but at the very point at which the horizon met the sky there was an intensity of light that grew brighter by the minute.

The orange was dying. Far more quickly than I would have ever guessed, it thinned away as the source of light brightened. The sky now was a blue so pale and brilliant that it was almost white. In the center of it, as if growing up from the horizon, was a spear of white light, leaning slightly to one side like a toppling church steeple. As it grew it thickened and brightened, becoming as the seconds passed so brilliant and incandescent that it was not possible to stare directly at it.

Future Denton suddenly gripped my arm.

"Look!" he said, pointing to the left of the center of brilliance.

A formation of birds, spread out in a delicate vee, was flapping slowly from left to right across our vision. After a few moments, the birds crossed directly in front of the growing column of light, and for a few seconds they could not be seen.

"What are they?" I said, my voice sounding coarse and harsh.

"Just geese."

They were visible again now, flying slowly on, blue sky behind them. After a minute or so they became lost to sight beyond rising ground some distance away.

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I looked again at the rising sun. In the short time I had been looking at the birds it had been transformed. Now the bulk of its body had appeared above the horizon and it hung in sight, a long, saucer-shape of light, spiked above and below with two perpendicular spires of incandescence. I could feel the touch of its warmth on my face. The wind was dropping.

I stood with Denton on that small platform, looking out across the land. I saw the city, or what part of it was visible from the platform, and I saw the last of the clouds disappearing across the horizon farthest from the sun. It shone down on us from a cloudless sky and Denton removed his cloak.

He nodded to me and showed me how we could climb down from the platform, by way of a series of metal ladders, to the land below. He went first. As I stepped down and stood for the first time on natural ground I heard the birds that had nested in the upper crannies of the city begin their morning song.

III

FUTURE DENTON walked with me once around the periphery of the city, then took me out across the ground towards a small cluster of temporary buildings which had been erected about five hundred yards from the city. Here he introduced me to Track Malchuskin, then returned to the city.

The Track was a short, hairy man, still half asleep. He didn't seem to resent the intrusion and treated me with some politeness.

"Apprentice Future, are you?"

I nodded. "I've just come from the city."

"First time out?"

"Yes."

"Had any breakfast?"

"No. The Future got me out of bed and brought me more or less straight here."

"Come inside. I'll make some coffee."

The interior of the hut was rough and untidy, in contrast to what I had seen within the city. There cleanliness and tidiness seemed to be of great importance, but Malchuskin's hut was littered with dirty pieces of clothing, unwashed pots and pans and half-eaten meals. In one corner was a large pile of metal tools and instruments and against one wall was a bunk, the covers thrown back in a heap. There was a background smell of old food.

Malchuskin filled a pan with water, and placed it on a cooking ring. He found two mugs somewhere, rinsed them in the butt and shook them to remove the surplus water. He put a measure of synthetic coffee into a jug and when the water boiled filled it up.

There was only one chair in the hut. Malchuskin removed some heavy steel tools from the table and moved

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it over to the bunk. He sat down and indicated that I should pull up the chair. We sat in silence for a while, sipping the coffee. It was made in exactly the same way as it was in the city, yet it seemed to taste different.

"Haven't had too many apprentices lately."

"Why's that?" I asked.

"Can't say. Not many of them coming up. Who are you?"

"Helward Mann. My father is–"

"Yeah, I know. Good man. We were in the creche together."

I frowned at that. Surely he and my father were not of the same age? Malchuskin saw my expression.

"Don't let it bother you," he said. "You'll understand one day. You'll find out the hard way, just like everything else in this goddam guild system makes you learn. It's a strange life in the Future guild. It wasn't for me, but I guess you'll make out."

"Why didn't you want to be a Future?"

"I didn't say I didn't want it–I meant it wasn't my lot. My own father was a Tracksman. The guild system again. But you want it hard, they've put you in the right hands. Done much manual work?"

"No–"

He laughed loudly. "The apprentices never have. You'll get used to it." He stood up. "It's time we started. It's early, but now you've got me out of bed there's no point being idle. They're a lazy lot of bastards."

He left the hut. I finished the rest of my coffee in a hurry, scalding my tongue, and went after him. He was walking toward the other two buildings. I caught up with him.

With a metal wrench he had taken from the hut he banged loudly on the door of each of the other two buildings, bawling at whoever was inside to get up. I saw from the marks on the doors that he probably always hit them with a piece of metal.

We heard movement inside.

Malchuskin went back to his hut and began sorting through some of the tools.

"Don't have too much to do with these men," he warned me. "They're not from the city. There's one of them–I've put him in charge. Rafael. He speaks a little English and acts as interpreter. If you want anything speak to him. Better still, come to me. There's not likely to be trouble, but if there is–call me. Okay?"

"What kind of trouble?"

"They don't do what you or I tell them. They're being paid and they get paid to do what we want. It's trouble if they don't. But the only thing wrong with this lot is that they're too lazy for their own good. That's why we start early. It gets hot later on and then we might as well not bother."

The day was already warm. The sun had risen high while I had been with Malchuskin and my eyes were beginning to water. They weren't accustomed to such bright light. I

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had tried to glance at the sun again, but it was impossible to look directly at it.

"Take these." Malchuskin passed me a large armful of steel wrenches and I staggered under the weight, dropping two or three. He watched in silence as I picked them up, ashamed at my ineptitude.

"Where to?"

"The city, of course. Don't they teach you anything there?"

I headed away from the hut, toward the city. Malchuskin watched from the door of his hut.

"South side—" he shouted after me. I stopped and looked round helplessly. Malchuskin came over to me.

"There." He pointed. "The tracks at the south of the city. Okay?"

"Okay." I walked in that direction, dropping only one more wrench on the way.

AFTER an hour or two I began to see what Malchuskin had meant about the men who worked with us. They stopped at the slightest excuse and only Malchuskin's bawling or Rafael's sullen instructions kept them at it.

"Who are they?" I asked Malchuskin when we stopped for a fifteen-minute break.

"Local men."

"Couldn't we hire better ones?"

"They're all the same around here."

I sympathized with them to a certain degree. Out in the open, with no shade at all, the work was vigorous and hot. Although I was determined not to slacken, the physical strain was more than I could bear. Certainly it was more strenuous than anything I had ever experienced.

The tracks at the south of the city ran for about half a mile, ending in no particular place. There were four tracks, each consisting of two metal rails supported on timber sleepers, which were in turn resting on sunken concrete foundations. Two of the tracks had already been considerably shortened by Malchuskin and his crew and we were working on the longest one still extant, the one laid as right outer.

Malchuskin explained that if I assumed the city was to the front of us, the four tracks were identified by left and right, outer and inner in each case.

Little thought was involved. What had to be done was routine, but heavy work.

In the first place the tie-bars connecting the rail to the sleepers had to be released for the whole length of the section of rail. This was then laid to one side and the other rail similarly released. Next we tackled the sleepers. These were attached to the concrete foundations by two clamps, each of which had to be slackened and removed manually. When the sleeper came free it was stacked on a bogie waiting on the next section of track. The concrete foundation, which I discovered was prefabricated

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and reusable, then had to be dug out of its soil emplacement and similarly placed on the bogie. When all this was done the two steel rails were placed on special racks along the side of the bogie.

Malchuskin or I would then drive the battery-powered bogie up to the next section of track and the process would be repeated. When the bogie was fully loaded the entire track crew would ride on it up to the rear of the city. Here it would be parked and the battery recharged from an electrical point fitted to the wall of the city for this purpose.

It took us most of the morning to load the bogie and take it up to the city. My arms felt as if they had been stretched from their sockets. My back was aching. I was filthy dirty and covered with sweat. Malchuskin, who had done no less work than any of the others—probably more—grinned at me.

"Now we unload and start again," he said.

I looked over at the laborers. They looked like I felt, although I suspected I, too, had done more than they, considering I was new to it and hadn't yet learned the art of using my muscles economically. Most of them were lying back in what little shadow was afforded by the bulk of the city.

"Okay," I said.

"No—I was joking. You think that lot would do any more without a bellyful of food?"

"No."

"Right, then—we eat."

He spoke to Rafael, then walked toward his hut. I went with him and we shared some of the heated-up synthetic food that was all he could offer.

THE afternoon started with the unloading. The sleepers, foundations and rails were loaded on to another battery-powered vehicle—this one traveled on four large balloon tires. When the transfer was completed, we took the bogie down to the end of the track and began again. The afternoon was hot and the men worked slowly. Even Malchuskin had eased up and after the bogie had been refilled with its next load he called a halt.

"Like to have got another load in today," he said and took a long draught from a bottle of water.

"I'm ready," I said.

"Maybe. You want to do it on your own?"

"Look—I'm willing, " I said, not wanting to reveal the exhaustion I was feeling.

"As it is you'll be useless tomorrow. No, we get this bogie unloaded, run it down to the track-end and that's it."

That wasn't quite it, as things turned out. When we returned the bogie to the track-end, Malchuskin started the men filling in the last section of the track with as much loose soil and dirt as we could find. This rubble was laid for twenty yards.

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I asked Malchuskin its purpose.

He nodded toward the nearest long track, the left inner. At its end was a massive concrete buttress, stayed firmly into the ground.

"You'd rather put up one of those instead?" he said.

"What is it?"

"A buffer. Suppose the cables all broke at once—the city would run backward off the rails. As it is, the buffers wouldn't put up much resistance, but it's all we can do."

"Has the city ever run back?"

"Once."

MALCHUSKIN offered me the choice of returning to my cabin in the city or remaining with him in his hut. The way he put it didn't leave me much choice. He obviously had low regard for the people inside the city, told me he rarely went inside.

"It's a cozy existence," he said. "Half the people in the city don't know what's going on out here. And I don't suppose they'd care if they did know."

"Why should they have to know? After all, if we can keep working smoothly it's not their problem."

"I know, I know. But I wouldn't have to use these damned local men if more city people came out here."

In the nearby dormitory huts the hired men were talking noisily. Some were singing.

"Don't you have anything at all to do with them?"

"I just use them. They're the Barter people's pigeon. If they get too lousy I lay them off and get the Barters to find me some more. Never difficult. Work's in short supply around here."

"Where is this?"

"Don't ask me—that's up to your father and his guild. I just dig up old tracks."

I sensed that Malchuskin was less alienated from the city than he made out. I supposed his relatively isolated existence gave him some contempt for those within the city, but as far as I could see he didn't have to stay out here in the hut. Lazy the workers might be, and just now noisy, but they seemed to act in an orderly manner. Malchuskin made no attempt to supervise them when there was no work to be done, so he could have stayed in the city if he chose.

"Your first day out, isn't it?" he reminded himself.

"That's right."

"You want to watch the sunset?"

"No—why?"

"The apprentices usually do."

"Okay."

Almost as if it were to please him I went out of the hut and looked past the bulk of the city toward the sky. Malchuskin came up behind me. hind me.

The sun was near the horizon and already I could feel the wind cold on my back. The clouds of the previous night had not returned and the sky was clear and blue. I watched the sun, able to look at it without hurting my eyes now that its rays

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were diffused by the thickness of the atmosphere. It had the shape of a broad orange disk, slightly tilted down toward us. Above and below, tall spires of light rose from the center of the disk. As we watched it sank slowly beneath the horizon, the upper point of light being the last to vanish.

"You sleep in the city, you don't get to see that," Malchuskin said.

"It's very beautiful," I said.

"You see the sunrise this morning?"

"Yes."

Malchuskin nodded. "That's what they do. Once a kid's made it to a guild, they throw him in at the deep end. No explanation, right? Out in the dark, until up comes the sun."

"Why do they do that?"

"Guild system. They believe it's the quickest way to get an apprentice to understand that the sun isn't the same as he's been taught."

"Isn't it?" I said.

"What were you taught?"

"That the sun is spherical."

"So they still teach that. Well, now you've seen that the sun isn't. Make anything of it?"

"No."

"Think about it. Let's go and eat."

We returned to the hut and Malchuskin directed me to start heating up some food while he bolted another bunk frame on top of the vertical supports around his own. He found some bedding in a cupboard and dumped it on the bunk.

"You sleep here," he said, indicating the upper bunk. "You restless at night?"

"I don't think so."

"We'll try it for one night. If you keep moving around we'll change over. I don't like being disturbed."

I thought there was little chance I would disturb him. I could have slept on the side of a cliff that night, I was so tired. We ate the tasteless food together and afterwards Malchuskin talked about his work on the tracks. I paid him scant attention and a few minutes later I laid on my bunk, pretending to listen to him. I fell asleep almost at once.

IV

I WAS awakened the next morning by Malchuskin moving about the hut, clattering the dishes from the previous evening's meal. I made to get out of the bunk as soon as I was fully conscious, but at once I was paralyzed by a stab of pain in my back. I gasped.

Malchuskin looked up at me, grinning.

"Stiff?"

I rolled onto my side and tried to draw my legs up. These too were stiff and painful, but with a considerable effort I managed to get myself into a sitting position. I sat still for a moment, hoping that the pain was cramp and that it would pass.

"Always the same with you kids from the city," Malchuskin said, but without malice. "You come out here keen I'll grant you. A day's work and

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you're so stiff you become useless. Don't you get any exercise in the city?"

"Only in the gymnasium."

"Okay, get down here and have some breakfast. After that you'd better go back to the city. Have a hot bath and see if you can find someone to give you a massage. Then report back here."

I nodded gratefully and clambered down from the bunk. This was no easier and no less painful than anything else I'd attempted so far. I discovered that my arms, neck and shoulders were as stiff as the rest of me.

I left the hut thirty minutes later, just as Malchuskin was bawling at the men to get started. I headed back toward the city, limping slowly.

It was the first time I had been left to my own devices away from the city. When in the company of others one never sees as much as when alone. The city was five hundred yards from Malchuskin's hut, and that was an adequate distance to be able to get some impression of its overall size and appearance. Yet during the whole of the previous day I had been able to afford it only the barest of glances. It was simply a large gray bulk dominating the landscape.

Now, hobbling alone across the ground toward it I could inspect it in more detail.

From the limited experience I had had of the interior of the city, I had never given much thought to what it might look like from outside. I had always conceived of it as being large, but the reality was that the city was rather smaller than I had imagined. At its highest point, on the northern side, it was approximately two hundred feet high, but the rest of it was a jumble of rectangles and cubes, fitted into what seemed to be a patternless arrangement of varying elevations. It was a dull brown and gray color, made as far as I could tell from many different kinds of timber. There seemed to be very little use of concrete or metals and nothing was painted. This external appearance contrasted sharply with the interior—or at least, those few areas I had seen—which were clean and brightly decorated. As Malchuskin's hut was directly to the west of the city, it was impossible for me to estimate the width as I walked toward it, though I estimated its length to be about fifteen hundred feet. I was surprised at how ugly it was and how old it appeared to be. There was much activity about, particularly to the north.

As I neared the city it occurred to me that I had no idea how I could enter it. Yesterday Future Denton had taken me around the exterior of the city, but my mind had been so swamped with new impressions that I had absorbed few of the details pointed out to me. It had looked so different then.

My only clear memory was that there was a door behind the platform from which we had observed the

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sunrise and I decided to head for that. This was not as easy as I had imagined.

I went to the south of the city, stepping over the tracks I had been working on the previous day, and moved around to the east side, where I felt sure Denton and I had descended by way of a series of metal ladders. After a long search I found such an access and began to climb. I went wrong several times and only after a long period of clambering painfully along catwalks and climbing gingerly up ladders did I locate the platform. I found that the door was locked.

I had no alternative but to ask. I climbed down to the ground, and walked once more to the south of the city where Malchuskin and the gang of men had started work again on dismantling the track.

With an air of aggrieved patience Malchuskin left Rafael in charge and showed me what to do. He led me up the narrow space between the two inner tracks, directly beneath the lip of the city's edge. Underneath the city it was dark and cool.

We stopped by a metal staircase.

"At the top of that there's an elevator," he said. "You know what that is?"

"Yes."

"You've got a guild key?"

I fumbled in a pocket and produced an irregularly shaped piece of metal that Clausewitz had given me. It opened the lock on the creche door. "Is this it?"

"Yes. There's a lock on the elevator. Go to the fourth level, find an administrator and ask if you can use the bathroom."

Feeling stupid, I did as he directed. I heard Malchuskin laughing as he walked back toward the daylight. I found the elevator without difficulty, but the doors would not open when I turned the key. I waited. A few moments later the doors opened abruptly and two guildsmen came out. They took no notice of me and went down the steps to the ground.

Suddenly the doors began to close of their own accord and I hurried inside. Before I could find any way of controlling the elevator, it began to move upward. I saw a row of keyed buttons placed on the wall near the door, numbered from one to seven. I jabbed my key into number four, but ineptly, making poor contact. The elevator seemed to be moving for a long time, but then it halted abruptly. The doors opened and I stepped forward. As I came out into the passageway, three more guildsmen stepped into the car.

I caught a glimpse of a painted sign on the wall opposite the car—seventh level. I had come too far. Just as the doors were closing I hurried inside again.

"Where are you going, apprentice?" one of the guildsmen asked.

"Fourth level."

"All right, relax."

He used his own key on number four, and this time when the car

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stopped it was on the right level. I mumbled my thanks to the guildsman who had spoken to me and stepped out.

In my various preoccupations I had been able to overlook the discomforts in my body for the last few minutes, but now I felt tired and ill once more. In this part of the city there seemed to be much activity—many people moving about the corridors, conversations going on, doors opening and closing. It was different from outside the city, for there was a timeless quality to the still countryside and although people moved and worked out there the atmosphere was more leisurely. The labors of men like Malchuskin and his gang had an elemental purpose but here, in the heart of the upper levels which had for so long been forbidden to me, all was mysterious and complicated.

I remembered Malchuskin's instructions and, choosing a door at random, I opened it and went in. There were two women inside—they were amused but helpful when I told them what I wanted.

A few minutes later I lowered my aching body into a bathful of hot water and closed my eyes.

IT HAD taken me so much time and effort to get my bath that I had wondered whether I would benefit by it at all—the fact was that when I had toweled myself dry and dressed again the stiffness was not nearly as bad. There were still traces but the fatigue had gone.

My early return to the city had inevitably brought Victoria to mind. The glimpse I had had of her at the ceremony had heightened my curiosity. The thought of returning immediately to dig old sleepers out of the ground paled somewhat—although I felt I shouldn't stay away from Malchuskin for too long—and I decided to see if I could find her.

I left the bathroom and hurried back to the elevator. It was not in use, but I had to summon it to the floor I was on. When it arrived I was able to study its controls in rather more detail. I decided to experiment.

I traveled first to the seventh level, but from a brief excursion into its corridors I could see no immediately obvious difference from the level I had just left. The same was true for most of the other levels, though there was more apparent activity on the third, fourth and fifth. The first level was the dark tunnel actually beneath the city itself.

I rode up and down a couple of times, discovering that there was a surprisingly long distance between the first and second levels. All other distances were very short. I left the elevator at the second level, feeling intuitively that this would be where I would find the creche and that if I turned out to be wrong I would go in search of it on foot.

Opposite the elevator entrance on the second level a flight of steps descended to a transverse corridor. I had a vague recollection of this from

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when Bruch had taken me up to the ceremony and soon I came across the door leading into the creche.

Once inside, I locked the door with the guild key. It was all so familiar. I realized that until the moment I shut the door my movements had been guarded and cautious, but now I felt at home. I hurried down the steps and walked along the short corridor of the area I knew so well. It looked different from the rest of the city and it smelled different. I saw the familiar scratches on the walls, where generations of children before me had inscribed their names, saw the old brown paint, the worn coverings on the floors, the unlockable doors to the cabins. Out of long habit I headed straight for my cabin, and went in. Everything here was untouched. The bed had been made up and the cabin was tidier than it had ever been when I was using it regularly, but my few possessions were still in place. So, too, were Jase's, though there was no sign of him.

I looked around once more, then returned to the corridor.

I headed on down the corridor toward the various rooms where we had been given lessons. Muted noises came through the closed doors. I peered through the circular glass peepholes and saw the classes in progress. A few days earlier I had been in there. In one room I saw my erstwhile contemporaries—some of them, like me, no doubt headed for an apprenticeship with one of the first-order guilds, most of them destined for administrative jobs in the city. I was tempted to go in and take their questions in my stride, maintaining a mysterious silence.

There was no segregation of the sexes in the creche and in each room I peered into I searched vainly for a sight of Victoria. When I had checked all the classrooms I went down to the general area: the dining-hall (here there was background noise of the midday meal being prepared), the gymnasium (empty) and the tiny open space, which gave access only of sight to the blue sky above. I went to the common-room, that one place in the whole extent of the creche that could be used for general recreation. Here there were several boys, some of whom I had been working with only a few days before. They were talking idly, but as soon as they noticed me I became the center of attention. It was the situation I had just now resisted.

They wanted to know which guild I had joined, what I was doing, what I had seen. What happened when I came of age? What was outside the creche?

Curiously, I wouldn't have been able to answer many of their questions, even if I had been able to break the oath. Although I had done many things in the space of a couple of days, I was still a stranger to all that I was seeing.

I found myself resorting—as indeed Jase had done—to concealing what little I knew behind a barrier of

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crypticism and humor. I clearly disappointed the boys and, although their interest did not diminish, the questions soon stopped.

I left the creche as soon as I could, since Victoria was evidently no longer there.

Descending by way of the elevator, I returned to the dark area beneath the bulk of the city and walked out between the tracks to the sunlight. Malchuskin was exhorting his unwilling laborers to unload the bogie of its rails and sleepers and he hardly noticed that I had returned.

V

THE days passed slowly and I made no more return visits to the city.

I had learned the error of my ways by throwing myself too enthusiastically into the physical side of the track work. I decided to follow Malchuskin's lead and confined myself in the main to supervising the hired laborers. Only occasionally would he and I pitch in and help. Even so, the work was arduous and long and I felt my body responding to the new labors. I soon felt fitter than ever before in my life—my skin was reddening under the rays of the sun and soon the physical work became less of a strain.

My only real complaint was with the unvarying diet of synthesized food and Malchuskin's inability to talk interestingly about the contribution we were making to the city's security. We would work late into the evenings and after a rough meal we would sleep.

Our work on the tracks to the south of the city was nearly complete. The task was to remove all the track and erect four buffers at a uniform distance from the city. The track we removed was carried around to the north of the city where it was being relaid.

One evening Malchuskin asked me, "How long have you been out here?"

"I'm not sure."

"In days."

"Oh—seven."

I had been trying to estimate it in terms of miles.

"In three days' time you get some leave. You have two days inside the city, then you come back here for another mile."

I asked him how he reckoned the passage of time in terms of both days and distance.

"It takes the city about ten days to cover a mile," he said. "And in a year it will cover about thirty-six and a half."

"But the city isn't moving."

"Not at the moment. It will be soon. Anyway, we don't take account of how much the city has actually moved, so much as how much it *should* have moved. It's based on the position of the optimum."

I shook my head. "What does that mean?"

"The optimum is the ideal position for the city to be. To maintain

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that it would have to move approximately a tenth of a mile every day. That's obviously out of the question, so we move the city toward optimum whenever we can."

"Has the city ever reached optimum?"

"Not as long as I can remember."

"Where's the optimum now?"

"About three miles ahead of us. That's average. My father was out here on the tracks before me and he told me once that they were then about ten miles from optimum. That's the most I've ever heard."

"But what would happen if we [illegible] reached optimum?"

Malchuskin grinned. "We'd go on digging up old tracks."

"Why?"

"Because the optimum's always moving. But we're not likely to reach optimum and it doesn't matter that much. Anywhere within a few miles of it is okay. Put it this way—if we could get ahead of optimum for a bit we could all have a good long rest."

"Is that possible?"

"I guess so. Look at it this way. Where we are at the moment the ground is fairly high. To get up here we had to go through a long stretch of rising country. That was when my father was out here. It's harder work to climb, so it took longer and we got behind optimum. If we ever come to some lower country we can coast down the slope."

"What are the prospects of that?"

"You'd better ask your guild that. Not my concern."

"But what's the countryside like here?"

"I'll show you tomorrow."

Though I hadn't followed much of what Malchuskin said, at least one thing had become clear, and that was how time was measured. I was six hundred and fifty miles old? that did not mean that the city had moved that distance during my lifetime, but that the optimum had.

Whatever the optimum was.

THE next day Malchuskin kept his promise. While the hired laborers took one of their customary rests in the deep shadow of the city Malchuskin walked with me to a low rise of land some distance to the east. Standing there we could see almost the whole of the city's immediate environment.

It was at present standing in the center of a broad valley, bounded north and south by two relatively high ridges of ground. To the south I could see clearly the traces of the track that had been taken up, marked by four parallel rows of scars where the sleepers and their foundations had been laid.

To the north of the city the tracks ran smoothly up the slope of the ridge. There was not much activity here, though I could see one of the battery-driven bogies rolling slowly up the slope with its load of rail and sleepers and its attendant crew. On the crest of the ridge itself there was a considerable degree of activity,

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although from the distance it was not possible to determine exactly what was going on.

"Good country this," Malchuskin said, but then immediately qualified it. "For a trackman, that is."

"Why?"

"It's smooth. We can take ridges and valleys in our stride. What gets me bothered is broken ground: rocks, rivers or even forests. That's one of the advantages of being high at the moment. This is all very old rock around here, and it's been smoothed out by the elements. But don't talk to me about rivers. Then I get agitated."

"What's wrong with rivers?"

"I said don't talk about them!" He slapped me good-humoredly on the shoulders and we started our walk back toward the city. "Rivers have to be crossed. That means a bridge has to be built unless there's one already there, which there never is. We have to wait around while the bridge is made ready and that causes a delay. Usually it's the Track guild that gets the blame for delays. But that's life. The trouble with rivers is that everyone's got mixed feelings about them. The one thing the city's permanently short of is water and if we come across a river that solves one problem for the time being. But we still have to build a bridge and that gets everyone nervous."

The hired laborers did not look exactly pleased to see us when we returned, but Rafael moved them and work soon recommenced. The last of the tracks had now been taken up, and all we had left to do was build the last buffer. This was a steel erection, mounted above and across the last section of track and utilizing three of the concrete sleeper foundations. Each of the four tracks had a buffer and these were placed in such a way that if the city were to roll backward it would be supported. The buffers were not in a line, owing to the irregular shape of the southern side of the city, and Malchuskin did not pretend they were an adequate safeguard.

"I shouldn't like them to have to be used," he said, "but if the city did roll, they would slow it even if they failed to stop it."

With the completion of the buffer our work was finished.

"What now?" I asked.

Malchuskin glanced up at the sun. "We ought to move house. I'd like to get my hut up across the ridge and there are the dormitories for the workers. It's getting late, though. I'm not sure that we could get it done before nightfall."

"We could do it tomorrow."

"That's what I'm thinking. It'll give the lazy bastards a few hours off. They'd like that."

He spoke to Rafael, who consulted the other men. There was little doubt about the decision. Almost before Rafael had finished speaking some of them started to walk off.

"Where are they going?"

"Back to their village, I expect," said Malchuskin. "It's just over

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there." He pointed toward the southeast, over beyond the southern ridge of high ground. "They'll be back, though. They don't like the work but there'll be pressure in the village, because we give them what they want."

"What's that?"

"The benefits of civilization," he said, grinning cynically. "To wit, the synthetic food you're always griping about."

"They like that stuff?"

"No more than you do. But it's better than an empty belly, which is what most of them had before we happened along here."

"I don't think I'd do all that work for that gruel. It's tasteless, it's got no substance and—"

"How many meals a day did you eat in the city?"

"Three."

"And how many were synthetic?"

"Only two," I said.

"Well, people like those poor sods work their skins off just so you can eat one genuine meal a day. And from what I hear, what they do for me is the least of it."

"What do you mean?"

"You'll find out."

Later that evening, as we sat in his hut, Malchuskin spoke more on this subject. I discovered that he wasn't as ill-informed as he tried to make out. He blamed it all on the guild system, as ever. It had been a long-established practice that the ways of the city were passed down from one generation to the next, not by tuition but on heuristic principles. An apprentice would value the traditions of the guilds far more by understanding at first hand the facts of existence on which they were based than by being trained in a theoretical manner. In practice, it meant that I would have to discover for myself how the men came to work on the tracks, what other tasks they performed and in fact all other matters concerning the continued existence of the city.

"When I was an apprentice," Malchuskin said, "I built bridges and I dug up tracks. I worked with the Traction guild and rode with men like your father. I know myself how the city continues to exist and through that I know the value of my own job. I dig up tracks and lay them, not because I enjoy the work but because I know why it has to be done. I've been out with the Barter guild and seen how they get the local people to work for us so I understand the pressures that are on the men who work under me now. It's all cryptic and obscure—that's the way you see it now. But you'll find out that it all has to do with survival—and you'll learn just how precarious that survival is."

"I don't mind working with you," I said.

"I didn't mean that. You've worked okay with me. All I'm saying is that all the things you've probably wondered about—the oath, for instance—have a purpose and, by God, it's a sensible purpose!"

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"So the men will be back in the morning."

"Probably. And they'll complain, and they'll slacken off as soon as you or I turn our backs—but even that's in the nature of things. Sometimes, though, I wonder—"

I waited for him to finish his sentence, but he said nothing more. It was an uncharacteristic sentiment, for Malchuskin did not seem in any way a pensive man. As we sat together he fell into a long silence, broken only when I got up to go outside to use the latrine. Then he yawned and stretched and kidded me about my weak bladder.

RAFAEL returned in the morning with most of the men who had been with us before. A few were missing, though the numbers had been brought up to strength by replacements. Malchuskin greeted them without apparent surprise and at once began supervising the demolition of the three temporary buildings.

First all the contents were moved out and placed in a large pile to one side. Then the buildings themselves were dismantled—not as difficult a task as I'd imagined, as they had evidently been designed to be taken down and put up again easily. Each of the walls was joined to the next by a series of bolts. The floors broke down into a series of flat wooden slats and the roofs were similarly bolted into place. Fittings such as doors and windows were part of the frames in which they sat. It took only an hour to demolish each cabin and by midday everything was done. Well before then Malchuskin had gone off by himself, returning a half-hour later in a battery-powered truck. We took a short break and ate a meal, then loaded the truck with as much of the material as it would hold and set off toward the ridge, Malchuskin driving. Rafael and a few of the workers clung to the sides of the truck.

It was some way to the ridge. Malchuskin steered a course that brought us diagonally toward the nearest part of the track and we drove the rest of the way alongside it. There was a shallow dip in the breast of the ridge and it was through this that the four pairs of rails had been laid. There were many men working this part of the track, some hacking manually at the ground to each side of the track—presumably to widen the dip sufficiently to take the bulk of the city as it passed through. Others toiled with mechanical drills, trying to erect five metal frames, each bearing a large wheel. Only one had been so far securely laid and it stood between the two inner tracks, a gaunt, geometric design with no apparent function.

As we passed through the dip Malchuskin slowed the truck, looking with interest at how the work was proceeding. He waved to one of the guildsmen supervising the work, then accelerated again as we passed over the summit of the ridge. From here a

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shallow downhill slope ran to a broad plain. To east and west, and on the far side of the plain I could see hills that were much higher.

To my surprise the tracks ended only a short distance beyond the ridge. The left outer track had been built for about a mile, but the other three were barely a hundred yards long. Two teams were already at work on these tracks, but it was immediately clear that progress was slow.

Malchuskin stared around. On our side of the tracks—that is, on the western side—stood a small cluster of huts, presumably the living quarters for the track teams already here. He headed the truck in that direction, but drove some way past before stopping.

"This'll do," he said. "We want the buildings up by nightfall."

I asked "Why don't we put them up by the others?"

"It's my policy not to. I have trouble enough with these men as it is. If they have too much contact with the others they drink more and work less. We can't stop them from mixing when they're not working, but there's no point in clustering them together."

"But surely they have a right to do what they want."

"They're being bought for their labor. That's all."

He clambered down from the cabin of the truck and began to shout at Rafael to start the work on the huts.

The truck was soon unloaded and, leaving me in charge of the rebuilding, Malchuskin drove the truck back over the ridge to collect the rest of the men and the materials.

AS NIGHTFALL approached, the rebuilding was nearly completed. My last task of the day was to return the truck to the city and connect it to one of the battery recharging points. I drove off, content to be alone again for a while.

As I drove over the ridge the work on the raised wheels had finished for the day and the site was abandoned but for two militiamen standing guard, their crossbows slung over their shoulders. They paid no attention to me. Leaving them behind, I drove down the other side toward the city. I was surprised to see how few lights were showing and how, with the approach of night, the daytime activities ceased.

Where Malchuskin had told me I would find recharging points I discovered that other vehicles were already connected up and no other places were available. I guessed that mine was the last truck to be returned that evening and that I would have to look around for more points. In the end I found a spare point on the south side of the city.

It was now dark and after I had attended to the truck I was faced with the long walk back alone. I was tempted not to return, but to stay the night inside the city. After all, it would take only a few minutes to get

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back to my cabin in the creche—but then I thought of Malchuskin and the reaction I would get from him in the morning.

Reluctantly I walked around the perimeter of the city, found the tracks leading northward and followed them up to the ridge. Being alone on the plain at night was a rather disconcerting experience. It was already cold and a strong breeze was blowing from the east, chilling me through my thin uniform. Ahead of me I could see the dark bulk of the ridge, set against the dull radiance of the clouded sky. In the dip, the angular shapes of the wheel structures stood on the skyline and, pacing to and fro in their lonely vigil, were the two militiamen. As I walked up to them I was challenged.

"Stop right there." Both men had come to a halt and, though I could not see for sure, I had a feeling that the crossbows were pointing in my direction. "Identify yourself."

"Apprentice Helward Mann."

"What are you doing outside the city?"

"I'm working with guildsman Malchuskin. On the tracks. I passed you just now in the truck."

"Oh, yes. Come forward."

I walked up to them.

"I don't know you," one of them said. "Have you just started?"

"Yes—about a mile ago."

"Which guild are you in?"

"The Futures."

The one who had spoken laughed. "Rather you than me."

"Why?"

"I like a long life."

"He's young, though," the other said.

"What are you talking about?" I said.

"Been up future yet?"

"No."

"Been down past yet?"

"No. I only started a few days ago."

A thought occurred to me. Although I could not see their faces in the dark I could tell by the sound of their voices that they were not much older than I. Perhaps seven hundred miles, not much more. But if that were so, then surely I should know them, for they would have been in the creche with me?

"What's your name?" I asked one of them.

"Conwell Sturner. Crossbowman Sturner to you."

"Were you in the creche?"

"Yes. Don't remember you, though. But then, you're just a kid."

"I've just left the creche. You weren't there."

They both laughed again and I felt my temper weakening. "We've been down past, son."

"What does that mean?"

"It means we're men."

"You ought to be in bed, son. It's dangerous out here at night."

"There's no one around," I said.

"Not now. But while the softies in the city get their sleep, we save 'em from the tooks."

"What are they?"

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"The tooks? The local thugs who jump out of shadows on young apprentices."

I moved past them. I wished I'd gone into the city and hadn't come this way. Nevertheless my curiosity was aroused.

"Really—what do you mean?" I said.

"There's tooks out there who don't like the city. If we didn't watch them, they'd damage the track. See these pulleys? They'd have them down if we weren't here."

"But it was the—tooks who helped put them up."

"Those as work for us. But there's a lot as doesn't."

"Get to bed, son. Leave the tooks to us."

"Just the two of you?"

"Aye, just us—and a dozen more all over the ridge. You hurry on down to bed, son, and watch you don't get a quarrel between the eyes."

I turned my back on them and walked away. I was seething with anger and had I stayed a moment longer I felt sure I would have gone for one or the other of them. I hated their manly patronizing of me and yet I knew I had needled them. Two young men armed with crossbows would be no defense against a determined attack and they knew it, too. But it was important for their self-esteem to belittle me and attach false prestige to themselves.

When I judged I was out of their earshot I broke into a run and almost at once stumbled over a sleeper. I moved away from the track and ran on. Malchuskin was waiting in the hut, and together we ate another meal of the synthetic food.

VI

AFTER two more days' work with Malchuskin the time came for my period of leave. In those two days Malchuskin spurred the laborers on to more work than I had ever seen them do and we made good progress. Although laying track was harder work than digging it up, there was the subtle benefit of seeing the positive results. The extra work took the form of having to dig the foundation pits for the concrete blocks before actually laying the sleepers and rail. As there were now three track crews working to the north of the city and each of the tracks was approximately the same length, there was the additional stimulus of competition among the crews. I was surprised to see how the men responded to this competition and as the work proceeded there was a certain amount of good-natured banter among them as they toiled.

"Two days," Malchuskin said just before I left for the city. "Don't take any longer. They'll be winching soon and we need every man available."

"Am I to come back to you?"

"It's up to your guild—but yes. The next two miles will be with me. After that you transfer to another

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guild and do three miles with them."

"Who will it be?" I said.

"I don't know. Your guild will decide that."

As we finished work late on the last night I slept in the hut. I had another reason, too—I had no wish to walk back to the city after dark and pass through the gap guarded by the militiamen. During the days there was little or no sign of the militia, but after my first experience of them Malchuskin had told me that a guard was mounted every night and during the period immediately prior to a winching operation the track was the most heavily guarded area.

The next morning I walked back along the track to the city.

IT WAS not difficult to locate Victoria now that I was authorized to be in the city. Before, I had been hesitant in looking for her, for at the back of my mind there had been the thought that I should have been getting back to Malchuskin as soon as I could. Now I had two whole days of leave and was relieved of the sense of evading my duties.

Even so, I still had no way of knowing how to find her and had to resort to the expedient of asking. After a few misroutings I was directed to a room on the fourth level. Here Victoria and several other young people were working under the supervision of one of the women administrators. As soon as Victoria saw me standing at the door, she spoke to the administrator, then came over to me. We walked out to the corridor.

"Hello, Helward," she said, shutting the door behind her.

"Hello. Look—if you're working I can see you later."

"It's all right. You're on leave, aren't you?"

"Yes."

"Then I'm on leave, too. Come on."

She led the way down the corridor, turned into a side passage, then walked down a short flight of steps. At the bottom was another corridor, lined on both sides by doors. She opened one of them and we went in.

The room beyond was much larger than any private room I had so far seen inside the city. The largest single piece of furniture was a bed placed against one of the walls, but the room was also well and comfortably furnished with a quite surprising amount of floor space. Against one wall were a washbasin and a small cooker. I saw a table and two chairs, a cupboard to keep clothes in and two easy chairs. Most unexpected of all, there was a window.

I went to it immediately and looked out. There was an area of open space beyond, bounded on the opposite side by another wall with many windows. The space extended to left and right, but the window was small and I could not see what lay at the sides of the space.

"Like it?" Victoria said.

"It's large. Is it all yours?"

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"In a sense. Ours, once we're married."

"Oh, yes. Someone said I'd have quarters to myself."

"This is probably what they meant," said Victoria. "Where are you living at the moment?"

"I'm still in the creche. But I haven't stayed there since the ceremony."

"Are you outside already?"

"I—"

I wasn't sure what to say. *Outside.* What could I tell Victoria, bound as I was to the oath?

"I know you go outside the city," said Victoria. "It's not such a secret."

"What else do you know?"

"Several things. But look, I've hardly spoken to you! Can I make you some tea?"

"Synthetic?" I immediately regretted the question—I did not wish to seem ungracious.

"I'm afraid so. But I'm going to be working with the synthetics team soon, so I might be able to find some way of improving it.

The atmosphere relaxed slowly. For the first hour or two we addressed each other coolly and almost formally, politely curious about one another, but soon we were able to take more things for granted. Victoria and I were not such strangers, I realized.

The subject of conversation turned to our life in the creche and this immediately brought a new doubt to the surface. Until I had actually left the city, I had had no clear idea of what I would find. The teaching in the creche had seemed to me—and to most of the others—dry, abstract and irrelevant. There were few printed books, and most of those were fictional works dealing with life on Earth planet, so the teachers had relied mainly on texts written by themselves. We knew, or thought we knew, much about everyday life on Earth planet, but we were told that this was not what we would find on this world. A child's natural curiosity immediately demanded to know the alternative, but on this the teachers had kept their silence. So there was always this frustrating gap in our knowledge between what, by reading, we learned of life on a world that was not this one and what, by surmise, we were left to imagine of the ways of the city.

This situation led to much discontent, evidenced by a surplus of unspent physical energy. But where, in the creche, was the outlet? Only the corridors and the gymnasium gave space enough to move, and then with severe limitations. The need was manifest in unrest: in the younger children emotional outbursts and disobedience, in older children fighting and passionate devotion to what few sports could be played in the tiny gymnasium—and in those in their last few miles before coming of age a premature carnal awareness.

There were token efforts at control by the creche administrators, but perhaps they understood these activi-

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ties for what they were. In any event, I had grown up in the creche and I no less than anyone else had taken part in these occasional outbursts. In the last twenty miles or so before coming of age I had indulged myself in sexual relationships with some of the girls—Victoria not among them—and it had not seemed to matter. Now she and I were to marry, and suddenly what had gone before did matter.

PERVERSELY, the more we talked the more I found that I was wishing we could lay this ghost from the past. I wondered if I should detail my various experiences, explain myself. Victoria, however, seemed to be in control of the conversation, directing it along channels of mutual acceptability. Perhaps she, too, had her ghosts. She told me something of life in the city and I was, of course, interested to hear this.

She said that as a woman she was not automatically granted a responsible position and only her engagement to me had made her present work possible. Had she become engaged to a non-guildsman she would have been expected to produce children as often as possible, and spend her time on routine domestic chores in the kitchens, or making clothes or whatever other menial tasks came along. Instead, she was now able to have some control over her future and could probably rise to the position of a senior administrator. She was currently involved in a training procedure similar in structure to mine. The only difference was that there appeared to be less emphasis on experience and more on theoretical education. Consequently she had already learned far more about the city and how it was run internally than I had.

I didn't feel free to speak of my work outside, so I listened to what she said with a great deal of interest.

She said that she had been told that there were two great shortages in the city: one was water—which I knew from what Malchuskin had said—and the other was population.

"But there are plenty of people in the city," I said.

"Yes—but the rate of live births has always been low and it's getting worse. What makes this even more serious is that there is a predominance in the live births of male babies. No one is really sure why."

"It's the synthetic food," I said sardonically.

"It might be." She had missed the point. "Until I left the creche, I had only vague notions of what the rest of the city might be like—but I had always assumed that everyone in it had been born here."

"Isn't that so?"

"No. A lot of women are brought into the city in an effort to boost the population. Or, more specifically, in the hope they'll produce female babies."

I said, "My mother came from outside the city."

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"Did she?" For the first time since we had met Victoria looked ill at ease. "I didn't know that."

"It doesn't matter," I said.

Abruptly Victoria fell silent. It really wasn't of much concern to me and I regretted having mentioned it.

"Tell me more about this," I said.

"No—there's not much more. What about you? What's your guild like?"

Quite apart from the fact that the oath forbade me to speak about it, I felt no inclination to talk. In that abrupt silence from Victoria I had gained a distinct impression that there had been more to say, but that some discretion prevented her from doing so. For the whole of my life—or at least as much of it as I could remember—the absence of my mother had been treated as a matter of fact. My father, whenever we spoke of it, talked factually about it, and there seemed to be no stigma attached. Indeed, many of the boys in the creche had been in the same situation as I and, what is more, most of the girls. Until the subject had provoked this reaction in Victoria I'd never thought about it.

"You're something of an oddity," I said, hoping to get her to return to the subject by approaching it from a different direction. "Your mother is still in the city."

"Yes," she said.

So that was to be the end of it. I decided to let it drop. In any event, I hadn't especially wanted to discuss matters outside ourselves. I had come to the city to spend my time getting to know Victoria, not to talk about genealogy.

But the feeling persisted. The conversation had died.

"What's out there?" I said, indicating the window. "Can we go there?"

"If you like. I'll show you."

I followed her out of the room and along the corridor to where a door led to the outside. There was not much to see—the open space was no more than an alley running between the two parts of the residential block. At one end of it there was a raised section, reached by a wooden staircase. We walked first to the opposite end, where another door led back into the city. Returning, we climbed the steps and came out on a small platform, where several wooden seats were placed and where there was room to move with some freedom. On two sides the platform was bounded by higher walls, presumably containing other parts of the city's interior and the side by which access was gained looked down over the roofs of the residential blocks and along the alleyway. But on the fourth side the view was uninterrupted and it was possible to see out into the surrounding countryside. This was a revelation to me—the terms of the oath had implied that no one but guildsmen should ever see outside the city.

"What do you think?" Victoria asked, sitting down on one of the seats which looked out across the view.

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I sat next to her. "I like it."

"Have you been out there?"

"Yes." It was difficult—already I was finding myself in conflict with the terms of the oath. How could I talk to Victoria about my work without breaking my word?

"We're not allowed up here very often. It's locked at night and only open a few hours of the day. Sometimes it's locked for several days on end."

"Do you know why?"

"Do you?" she asked.

"It's probably—something to do with the work out there."

"Which you're not going to talk about."

"No," I said.

"Why not?"

"I can't."

She glanced at me. "You're very tanned. Do you work in the sun?"

"Some of the time."

"This place is locked when the sun's overhead. All I've ever seen of it is the rays touching the higher parts of the buildings."

"There's nothing to see," I said. "It's very bright and you can't stare at it."

"I'd like to find that out for myself."

I ASKED, "What are you doing at the moment? In your work, I mean?"

"Nutrition."

"What's that?"

"It's determining how to work out a balanced diet. We have to make sure that the synthetic food contains enough protein and that people get the right amount of vitamins." She paused, her voice having reflected a general lack of interest in the subject. "Sunlight generates vitamins, you know."

"Does it?"

"Vitamin D. It's produced in the body by the action of sunlight on the skin. That's worth knowing if you ever see the sun."

"But it can be synthesized," I said.

"Yes—and it is. Shall we go back to the room and have some more tea?"

I said nothing to this. I don't know what I had expected from Victoria, but I had not anticipated this. Illusions of some romantic ideal had tempted me during my days of working with Malchuskin, and from time to time these had been tempered by a feeling that perhaps she and I might have to adapt to each other. In any event, it had never occurred to me that there would be an undercurrent of resentment between us. I had seen us working together toward realizing the intimate relationship planned for us by our parents and somehow shaping it in such a way that it would become a realistic and perhaps even loving relationship. What I had not foreseen was that Victoria had seen us both in larger terms: that I would be forever enjoying the advantages of a way of life forbidden to her.

We stayed on the platform. Vic-

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toria's remark about returning to the room had been an irony and I was sensitive enough to identify it. Anyhow, I felt that for different reasons we would both prefer to stay on the platform—I because my work outside had given me a taste for fresh air, and Victoria because this platform was as near as she could come to leaving the city. Even so, the undulating countryside to the east of the city served as a reminder of the newly discovered difference that separated us.

"You could apply to transfer to a guild," I said in a moment. "I'm sure—"

"I'm the wrong sex," she said abruptly. "It's men only, or didn't you realize that?"

"No."

"It hasn't taken me long to work out a few things," she went on, speaking quickly and barely suppressing her bitterness. "I'd seen it all my life and never recognized it: my father always away from the city, my mother working in her job, organizing all those things we took for granted, like food and heating and disposal of sewage. Now I have recognized it. Women are too valuable to risk outside. They're needed here in the city because they breed and they can be made to breed again and again. If they're not lucky enough to be born in the city, they can be bought from outside and sent away when they've served their purpose." The sensitive subject again, but this time she didn't falter. "I know that the work outside the city has to be done and whatever it is it's done at risk—but I've been given no option. Just because I'm a woman I have no choice but to be kept inside this damned place and learn fascinating things about food production, and whenever I can I have to give birth."

I asked, "Do you not want to marry me?"

"There's no alternative."

"Thanks."

SHE stood up, walked angrily toward the steps. I followed her down and walked behind her as she returned to her room. I waited in the doorway, watching her as she stood with her back to me, looking out of the window at the narrow alleyway between the buildings.

"Do you want me to go?" I said.

"No—come in and close the door."

She didn't move.

"I'll make some more tea," I said.

"All right." She entered reluctantly.

The water in the pan was still warm and it took only a minute or so to bring it back to boiling.

"We don't have to marry," I said.

"If it's not you it'll be someone else." She turned and sat beside me, taking her cup of the synthetic brew. "I've nothing against you, Helward. You should know that. Whether we like it or not, my life and yours are dominated by the guild system. We can't do anything about that."

"Why not? Systems can be changed."

"Not this one. It's too firmly entrenched. The guilds have the city

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sewn up, for reasons I don't suppose I'll ever know. Only the guilds can change the system and they never will."

"You sound very sure."

"I am," she said. "And for the good reason that the system that runs my life is itself dominated by what goes on outside the city. As I can never take part in that I can never do anything to determine my own life."

"But you could—through me."

"You won't even talk about it."

"I can't," I said.

"Why not?"

"I can't even tell you that."

"Guild secrecy."

"If you like," I said.

"And even as you're sitting here now, you're subscribing to it."

"I have to," I said simply. "I was made to swear—"

Then I remembered: the oath itself was one of the terms of the oath. I had breached it and so easily and naturally that it had been done before I'd thought.

To my surprise, Victoria reacted not at all.

"So the guild system is ratified," she said. "It makes sense."

I finished my tea. "I think I'd better go."

"Are you angry with me?" she asked.

"No. It's just—"

"Don't go. I'm sorry I lost my temper with you—it's not your fault. Something you said just now—through you I could determine my own life. What did you mean?"

"I'm not sure. I think I meant that as the wife of a guildsman, which I'll be one day, you'd have more of a chance of—"

"Of what?"

"Well—seeing through me whatever sense there is in the system."

"And you're sworn not to tell me."

"I—yes."

"So first-order guildsmen have it all worked out. The system demands secrecy."

She leaned back and closed her eyes.

I was confused and angry with myself. I had been an apprentice for ten days and already I was technically under sentence of death. It was too bizarre to take seriously, but my memory of the oath was that the threat had been a convincing one at the time. The confusion arose because unwittingly Victoria had involved the tentative emotional commitment we had made to each other. I could see the conflict, but could do nothing about it. I knew from my own life inside the creche the subtle frustrations that arose through being allowed no access to the other parts of the city. If that were extended to a larger scale—if one were allowed a small part in the running of the city, but had been given a point beyond which no actions were possible—the frustration would continue. But surely this was no new problem in the city? Victoria and I were not the first to be married in this way.

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Before us there must have been others who had encountered the same rift. Had they simply taken the system as it appeared to them?

Victoria didn't move as I left the room and strode toward the creche.

AWAY from her, away from the inescapable syndrome of reaction and counterreaction, I became more worried about my own situation. If the oath were to be taken at all seriously I could be killed should word reach one of the guildsmen. Could breaching the oath be that dreadful a thing?

Would Victoria tell anyone else what I had said? On thinking this my first impulse was to go back to see her and plead for her silence—but that would have made both the breach and her own resentment more serious.

I wasted the rest of the day, lying on my bunk and fretting about the situation. Later I ate in one of the dining rooms of the city and was thankful not to see Victoria.

IN THE middle of the night, Victoria came to my cabin. My first awareness was of the sound of the door closing and as I opened my eyes I saw her as a tall shape standing beside the bed.

"Wha—"

"Ssh. It's me."

"What do you want?" I reached out to find the light switch, but her hand came across and took my wrist.

"Don't turn on the light."

She sat down on the edge of the bed and I sat up.

"I'm sorry, Helward. That's all I've come to say."

"Okay."

She laughed. "You're still asleep, aren't you?"

"Not sure. Might be."

She leaned forward and I felt her hands press lightly against my chest and then move up until they were behind my neck. She kissed me.

"Don't say anything," she said. "I'm just very sorry."

We kissed again and her hands moved until her arms were tight around me.

"You wear a nightshirt in bed."

"What else?"

"Take it off."

She stood up suddenly and I heard her undoing the coat she was wearing. When she sat down again, much closer, she was naked. I fumbled with my nightshirt, getting it caught as it came over my head. Victoria pulled back the covers and squeezed in beside me.

"You came down here like that?" I asked.

"There's no one about." Her face was very close to mine. We kissed again and as I pulled away my head banged against the cabin wall. Victoria cuddled up close to me, pressing her body against mine. Suddenly she laughed loudly.

"Great guilds! Shut up!"

"Why?"

"Someone will hear."

"They're all asleep."

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"They won't be if you keep laughing."

"I said, don't talk." She kissed me again.

In spite of the fact that my body was already responding eagerly to her I was stricken with alarm. We were making too much noise. The walls in the creche were thin and I knew from long experience that sounds transmitted readily. With her laughter and our voices, the fact that of necessity we were squeezed in the bunk against the walls, I was certain we'd awaken the whole creche. I pushed her away and told her this.

"It doesn't matter," she said.

"It does."

I flung back the bedcovers and scrambled over her. I turned on the light. Victoria shielded her eyes against the glare and I tossed her coat to her.

"Come on. We'll go to your room."

"No."

"Yes." I was pulling on my uniform.

"Don't put that on," she said. "It smells."

"Does it?"

"Abominably."

She sat up and as she did so I stared at her, admiring the neatness of her naked body. She pulled the coat around her shoulders, then got out of the bed.

"Okay," she said. "But let's be quick."

We left my cabin and let ourselves out of the creche. We hurried along the corridors. As Victoria had said, this late at night no one was about and the corridor lights were dimmed. In a few minutes we had reached her room. I closed the door and bolted it. Victoria sat down on the bed, holding her coat around her.

I took off my uniform and climbed into the bed.

"Come on, Victoria."

"I don't feel like it now."

"Guilds! Why not?"

"We should have stayed where we were," she said.

"Do you want to go back?"

"Of course not."

"Get in with me," I said. "Don't sit there."

"Okay."

She undid her coat and dropped it on the floor, then climbed in beside me. We put our arms around each other and kissed for a moment, but I knew what she meant. The desire had left me as rapidly as it had come. After a while we just lay there in silence. The sensation of being in bed with her was pleasant, but although I was aware of the sensuality of it nothing happened.

Eventually, I said, "Why did you come to see me?"

"I told you."

"Was that all—that you were sorry?"

"I think so."

"I nearly came to see you," I said. "I've done something I shouldn't. I'm frightened."

"What was it?"

"I told you—I told you I had been

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made to swear something. You were right, the guilds impose secrecy on their members. When I became an apprentice I had to take an oath and part of it was that I had to swear I would not reveal the existence of the oath. I broke it by telling you."

"Does it matter?"

"The penalty is death."

"But why should they ever find out?"

"If–"

Victoria said, "If I say anything, you mean. Why should I?"

"I'm not sure. But the way you were talking today–your resentment at not being allowed to lead your own life–I felt sure you would use it against me."

"Until just now it meant nothing to me. I wouldn't use it. Anyway, why should a wife betray her husband?"

"You still want to marry me?"

"Yes."

"Even though it was arranged for us?"

"It's a good arrangement," she said and held me tighter for a few moments. "Don't you feel the same?"

"Yes."

A FEW minutes later Victoria said, "Will you tell me what goes on outside the city?"

"I can't."

"Because of the oath?"

"Yes."

"But you're already in breach of it. What could matter now?"

"There's nothing to tell anyway," I said. "I've spent ten days doing a lot of physical work and I'm not sure why."

"What kind of physical work?"

"Victoria–don't question me about it."

"Well, tell me about the sun. Why is no one in the city allowed to see it?"

"I don't know."

"Is there something wrong with it?"

"I don't think so–"

Victoria was asking me questions I should have asked myself, but hadn't. In the welter of new experiences, there had been hardly time to register the meaning of anything I'd seen, let alone query it. Confronted with these questions–quite aside from whether or not I should answer them–I found myself demanding answers. Was there indeed something wrong with the sun that could endanger the city? Should this be kept secret, if so? But I had seen the sun and . . .

"There's nothing wrong with it," I said. "But it doesn't look the same shape as I'd thought."

"It's a sphere."

"No it's not. Or at least it doesn't look like one."

"Well?"

"I shouldn't tell you, I'm sure."

"You can't leave it like that," she said.

"I don't think it's important."

"I do."

"Okay." I had already said too

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much, but what could I do? "You can't see it properly during the day, because it's so bright. But at sunrise or sunset you can see it for a few minutes. I think it's disk-shaped. But it's more than that and I don't know the words to describe it. In the center of the disk, top and bottom, there's a kind of shaft."

"Part of the sun?"

"Yes. A bit like a spinning top. But it's difficult to see clearly because it's so bright even at those times. The other night I was outside and the sky was clear. There's a moon and that's the same shape. But I couldn't see that clearly either, because it was in the wrong phase."

"Are you sure of this?"

"It's what I've seen."

"But it's not what we were taught."

"I know," I said. "But that's how it is."

I said no more. Victoria asked more questions but I pushed them aside, pleading that I did not know the answers. She tried to draw me out further on the work I was doing, but somehow I managed to keep my silence. Instead I asked her questions about herself and soon we had moved away from what was for me a dangerous subject. It could not be buried forever, but I needed time to think. Some time later we made love and shortly afterward we fell asleep.

IN THE morning Victoria made some breakfast, then left me sitting naked in her room while she took my uniform to be laundered. While she was away I washed and shaved, then lay on the bed until she returned.

I put my uniform on again. It felt crisp and fresh, not at all like the rather stiff and odorous second skin it had become as a result of my labors outside.

We spent the rest of the day together. Victoria took me around to show me the interior of the city. It was far more complex than I had ever realized. Most of what I had seen until then was the residential and administrative section, but there was more to it than this. At first I wondered how I should ever find my way around until Victoria pointed out that in several places plans of the layout had been attached to the walls.

I noted that the plans had been altered many times and one in particular caught my attention. We were in one of the lower levels, and beside a recently drawn revised plan was a much older one, preserved behind a sheet of transparent plastic. I looked at this with great interest, noting that its directions were printed in several languages. Of these I could recognize only the French and English.

"What are these others?" I asked her.

"That's German and the others are Russian and Italian. And this—" she pointed to an ornate, ideographic script—"is Chinese."

I looked more closely at the plan, comparing it with the recent one

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next to it. The similarity could be seen, but it was clear that much alteration work had been carried out inside the city between the compiling of the two plans.

"Why were there so many languages?"

"We're descended from a group of mixed nationals. I believe English has been the standard language for many thousands of miles, but that's not always been the case. My own family is descended from the French."

"Oh, yes," I said.

On this same level Victoria showed me the synthetics plant. It was here that the protein-substitutes and other organic surrogates were synthesized from timber and vegetable products. The smell was terribly strong and I noticed that all the people who worked here were wearing masks. Victoria and I passed quickly into the next area, where research was carried out to improve texture and flavor. It was here, Victoria told me, she would soon be working.

Later Victoria expressed more of her frustrations, her fears for the future. This time I was more prepared and was able to reassure her. I told her to look at her own mother, who led a fulfilled and useful life. I promised her—under persuasion—that I would tell her more of my own life and said that I would do what I could, when I became a full guildsman, to make the system more open, more liberal. My promise seemed to quiet her a little and together we passed a relaxed evening and night.

VII

VICTORIA and I agreed that we should marry as soon as possible. She told me that during the next mile she would find out what formalities we had to undergo and that if it were possible we would marry during my next period of leave or during the one after. In the meantime I had to return to my duties outside.

As soon as I came out from underneath the city it was obvious that much progress had been made. The immediate environment of the city had been cleared of most of the impedimenta of the work. No temporary buildings were in sight and no battery-operated vehicles stood against the recharging points—all, presumably, were in use beyond the ridge. A more fundamental difference was that leading out from the northern edge of the city were five cables, which lay on the ground beside the tracks and disappeared from view over the hump of the ridge. On guard beside the track were several militiamen.

Suspecting that Malchuskin would be busy I walked quickly toward the ridge. When I reached the summit my suspicions were confirmed. In the distance, where the tracks ended, a flurry of activity concentrated around the right inner track. More crews were working on some metal structures beyond, but from this distance it was impossible to determine their function. I hastened down.

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The walk took me longer than I had anticipated, as the longest section of track was now more than a mile and a half in length. Already the sun was high and by the time I found Malchuskin and his crew I was hot and sweaty.

Malchuskin barely acknowledged me and I took off the jacket of my uniform and joined in the work.

The crews were laboring to get this section of track extended to a length equal to the others, but the complication was that a patch of ground with a rock-hard subsoil had been encountered. Although this meant that the concrete foundations were not necessary, the pits for the sleepers could only be dug with the greatest difficulty.

I found a pickaxe on a nearby truck and started to work. Soon the more sophisticated problems I had encountered inside the city seemed very remote indeed.

In the periods of rest I gathered from Malchuskin that apart from this section of track all was nearly ready for the winching operation. The cables had been extended and the stays were dug. He took me out to the stay-emplacements and showed me how the steel girders were buried deep into the ground to provide a sufficiently strong anchor for the cables. Three of the stays were completed and the cables were connected. One more stay was in the process of completion, and the fifth was being erected now.

There was a general air of anxiety among the guildsmen working on the site and I asked Malchuskin the cause of this.

"They're fretting about time," he said. "It's taken us twenty-three days since the last winching to lay the tracks this far. On present estimates we'll be able to winch the city tomorrow if nothing goes wrong. That's twenty-four days. Right? The most we can winch the city this time is just under two miles—but in the time we've taken to do that the optimum has moved forward two and a half miles. So even when we've done this we'll still be half a mile farther behind optimum than we were at the last winching."

"Can we make that up?"

"On the next winching, perhaps. I was talking to some of the Traction men last night. They reckon we can do a short winch next time—and then two long ones. They're worried about those hills." He waved vaguely in a northern direction.

"Can't we go around them?" I said, noting that a long way to the northeast the hills appeared to be slightly lower.

"We could—but the shortest route toward optimum is due north. Any angular deflection away from that just adds distance to be covered."

I didn't fully understand everything he told me, but the sense of urgency came across clearly.

"There's one good thing," Malchuskin went on. "We're dropping this crowd of tooks after this. Future has found a bigger settlement some-

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where up north and the people there are desperate for work. That's how I like them. The hungrier they are the harder they'll work—for a time at least."

The work continued. That evening we didn't finish until after sunset, Malchuskin and the other Track guildsmen driving laborers with bigger and better curses. I had no time to react one way or another, for the guildsmen themselves—and I—worked no less hard. By the time we returned to the hut for the night I was exhausted.

IN THE morning Malchuskin left the hut early, instructing me to bring Rafael and the laborers to the site as soon as possible. When I arrived he and three other Track guildsmen were in argument with the guildsmen preparing the cables. I set Rafael and the men to work on the track, but I was curious about the dispute. When Malchuskin eventually came over to us he said nothing about it but threw himself into the work, shouting angrily at Rafael.

Some time later, when we took a short break, I asked him about the trouble.

"The Traction men," he said, "want to start winching now, before the track's finished."

"Can they do that?"

"Yes. They say it'll take some time to get the city up to the ridge and we could finish off here while that's going on. We won't allow it."

"Why not? It sounds reasonable."

"Because it would mean working under the cables. There's a lot of strain on the cables, particularly when the city's being winched up a slope, like the one before the ridge. You've never seen a cable break, have you?" It was a rhetorical question. I hadn't known before this that cables were even used. "You'd be cut in half before you heard the bang," Malchuskin finished sourly.

"So what was agreed?"

"We've got an hour to finish. Then they start winching."

There were still three sections of rail to lay. We gave the men a few more minutes' rest and then the work started again. As there were now four guildsmen and their teams concentrated in one area we moved quickly, but even so it took most of the hour to complete the track.

With some satisfaction Malchuskin signaled to the Traction men that we were ready. We collected our tools and carried them to one side.

"What now?" I asked Malchuskin.

"We wait. I'm going back to the city for a rest. Tomorrow we start again."

"What shall I do?"

"I'd watch if I were you. You'll find it interesting. Anyway, we ought to pay off these men. I'll send a Barter guildsman out to you later today. Keep them here until he arrives. I'll be back in the morning."

"Okay," I said. "Anything else?"

"Not really. While the winching is taking place the Traction men are in charge out here, so if they tell you to

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jump, jump. They might need something done to the tracks, so you'd better be alert. But I think the tracks are all right. They've already been checked."

He walked away from me, toward his hut. He looked very tired. The hired men also went to their huts and soon I was left to my own devices. Malchuskin's remark about the danger of a breaking cable had alarmed me, so I sat down on the ground at what I considered a safe distance from the site.

There was not much activity in the region of the stay emplacements. All five of the cables had been hooked up, and now ran slackly from the stays across the ground parallel to the tracks. Two Traction guildsmen were by the emplacements, carrying out what I presumed was a final check on the connections.

From the region of the ridge a group of men appeared and walked in two orderly files toward us. From this distance it was not possible to see who they were, but I noticed that one of their number left the file at approximately hundred-yard intervals and took up a position at the side of the track. As the men approached I saw that they were militiamen, each equipped with a crossbow. By the time the group reached the stay emplacements only eight of them were left and these took up a defensive formation. After a few minutes one of the militiamen walked over to me.

"Who are you?"

"Apprentice Helward Mann."

"What are you doing?"

"I've been told to watch the winching."

"All right. Keep your distance. How many tooks are there here?"

"I'm not sure," I said. "About sixty, I think."

"They been working on the track?"

"Yes."

He grinned. "Too bloody tired to do any harm. That's okay. Let me know if they cause any trouble."

He wandered away and joined the other militiamen. What kind of trouble the laborers would cause wasn't clear to me, but the attitude of the militia toward them seemed to be curious. I could only presume that at some time in the past the tooks had caused some kind of damage to the tracks or the cables, but I couldn't see any of the men with whom we'd been working presenting a threat to us.

THE militiamen on guard beside the tracks seemed to me to be dangerously near the cables, but they showed no sign of any awareness of this. They marched patiently to and fro, pacing their allotted sections of the track.

I noticed that the two Traction men at the emplacements had taken up a position behind metal shields, just beyond the stays. One of them had a large red flag and was looking through binoculars toward the ridge. There, beside the five wheel pulleys,

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I could just make out another man. As all attention seemed to be on this man I watched him curiously. He had his back toward us, as far as I could make out at this distance.

Suddenly he turned and swung his flag to attract the attention of the two men at the stays. He waved it in a wide semicircle below his waist, to and fro. Immediately the man at the stays with the flag came out from behind his shield and confirmed the signal by repeating the movement with his own flag.

A few moments later I noticed that the cables were sliding slowly across the ground toward the city. On the ridge I could see the pulley wheels turning as the slack was taken up. One by one the cables stopped moving, although the major part of their length still lay flat on the ground–I presumed because of the weight of the cables themselves, for in the region of the stays and the pulleys the cables were well clear of the ground.

"Give them the clear," shouted one of the men at the stays and at once his colleague waved his flag over his head. The man on the ridge repeated the signal, then moved quickly to one side and was lost to view.

I waited, curious to see what was next–although from all I could see nothing was happening. The militiamen paced to and fro–the cables stayed taut. I decided to walk over to the Traction men and find out what was going on.

No sooner was I on my feet and walking in their direction than the man who had been signaling waved his arms at me frantically.

"Keep clear!" he shouted.

"What's wrong?"

"The cables are under maximum strain!"

I moved back.

The minutes passed and there was no evident progress. Then I realized that the cables had been slowly tightening until they were clear of the ground for most of their length.

I stared southward at the dip in the ridge: the city had come into sight. From where I was sitting I could just see the top corner of one of the forward towers bulking up over the soil and rocks of the ridge. More of the city came into view even as I watched.

I moved in a broad arc, still maintaining a healthy distance from the cables, and stood behind the stays, looking along the tracks toward the city. With painful slowness it winched itself up the farther slope until it was only a few feet away from the five wheel pulleys which carried the cables over the crest of the ridge. Here it stopped and the Traction men began their signaling once more.

There followed a long and complicated operation in which each of the cables was slackened off in turn, while the wheel pulley was dismantled. I watched the first pulley removed in this way, then grew bored. I realized I was hungry and,

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suspecting that I was unlikely to miss anything of interest, I went back to the hut and heated a meal for myself.

There was no sign of Malchuskin, although nearly all his possessions were still in the hut.

I took my time over the meal, knowing that at least another two hours would elapse before the winching could be resumed. I enjoyed the solitude and the change from the strenuous work of the past day.

When I left the hut I remembered the militiaman's warning about potential trouble from the laborers and walked over to their dormitory. Most of them were outside, sitting on the ground, watching the work on the pulleys. A few were talking, arguing loudly and gesticulating, but I decided the militia saw threats where none existed. I walked back toward the track.

I GLANCED at the sun—it was not long to nightfall. I reasoned that the rest of the winching should not take long once the pulleys were out of the way, for it was clear that now the tracks led along a downhill gradient.

In due course the final pulley was removed and all five cables were once again taut. There was a short wait until, at a signal from the Traction man at the stays, the slow progress of the city continued—down the slope toward us. Contrary to what I had imagined, the city did not run smoothly of its own accord on the advantageous gradient. By the evidence of what I saw the cables were still taut—the city was still having to pull itself. As it came closer I detected a slackening of tension in the manner of the two Traction men, but their vigilance didn't alter. Throughout the operation they concentrated their whole attention on the oncoming city.

Finally, when the huge construction was no more than about ten yards from the end of the tracks, the signaler raised his red flag and held it over his head. A large window ran across the face of the forward tower and here one of the many men who stood in view raised a similar flag. Seconds later the city halted.

There was a pause of about two minutes. Then a man came through a doorway in the tower and stood on a small platform overlooking us.

"Okay—brakes secured," he called down. "We're slackening off now."

The two Traction men came out from behind their metal shelters and stretched their limbs exaggeratedly. Undoubtedly they had been under considerable mental strain for several hours. One of them walked straight over to the edge of the city and urinated against its side. He grinned back at the other, then hauled himself up onto a ledge and clambered up the superstructure of the city itself until he reached the platform. The other man walked down past the cables—which were now visibly slacker—and disappeared under the lip of the city itself. The militiamen were

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still deployed in their defensive formation, but even they seemed to be more relaxed now.

The show was over. Seeing the city so near I was tempted to go inside myself, but I wasn't sure whether I should. There was only Victoria to see, and she would be occupied with her work. Besides, Malchuskin had told me to stay with the men and I thought I ought not disobey him.

As I was walking toward the hut a man came to me from the direction of the city.

"Are you Apprentice Mann?"

"Yes."

"Jaime Collings, from the Barter guild. Track Malchuskin said there were some hired men here who were to be paid off."

"That's right."

"How many?" said Collings.

"In our crew, fifteen. But there are several more."

"Any complaints?"

"What do you mean?" I said.

"Complaints—any trouble, refusal to work."

"They were a bit slow, and Malchuskin was always shouting at them."

"Did they ever refuse to work?"

"No."

"All right. Do you know who their squad leader was?"

"There was one called Rafael, who spoke English."

"He'll do."

TOGETHER we walked over to the huts and we found the men. At their sight of Collings, silence fell abruptly.

I pointed out Rafael. Collings and he spoke together in Rafael's language and almost at once one of the others shouted out angrily. Rafael ignored him and spoke to Collings, but it was clear that there was a lot of animosity. Once again someone shouted and soon many of the others had joined in. A crowd gathered around Collings and Rafael, some of the men reaching through the packed bodies and jabbing at Collings.

"Do you need any help?" I shouted over the row at him, but he didn't hear. I moved closer and shouted the question again.

"Get four of the militia," he called out in English. "Tell them to keep it low."

I stared at the arguing men for a moment, then hurried away. There was still a small group of the militia in the area of the cable stays and I went in that direction. They had evidently heard the noise of the argument and were already looking toward the crowd of men. When they saw me running over to them six of the men started out.

"He wants four militiamen," I said, gasping from my running.

"Not enough. Leave that to me, sonny."

The man who had spoken, who was evidently in charge, whistled loudly and beckoned toward some more of his men. Four more militiamen left their position near the city and ran over. The group of ten

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soldiers now ran toward the scene of the argument. I tailed them.

Without waiting to consult Collings, who was still in the center of the melee, the militiamen charged into the group of men, swinging their crossbows as clubs. Collings turned around suddenly, shouted at the militiamen, but was seized from behind by one of the workers. He was dragged to the ground and the men moved in, kicking at him.

The militiamen were obviously trained for this kind of fighting, for they moved expertly and quickly, swinging their improvised clubs with great precision and accuracy. I watched for a moment, then joined the struggle, trying to reach Collings. One of the hired men grabbed at my face, his fingers closing over my eyes. I tried to snatch my head away, but he had helpers. Suddenly I was free—and saw two men who had attacked me fall. The militiamen who had rescued me made no sign of recognition, but carried on with their brutal clubbing.

The crowd was swelling now, as other locals came to give assistance. I paid no heed to this and turned back into the thick of it, still trying to reach Collings. A narrow back was directly in front of me, clad in a thin white shirt sticking wetly to the skin. Unthinkingly I slammed my arm around the man's throat, pulled his head back and punched him roughly in the ear. He dropped. Another man was beyond him and I tried the same tactic, but this time before I could land a blow I was kicked roughly and went down.

Through the mass of legs I saw Collings's body on the ground, still being kicked. He was lying face down, his arms defensively over his head. I tried to push my way across to him, but then I too was being kicked. Another foot slammed against the side of my head, and for a moment I blacked out. A second later I was conscious again and, like Collings, I covered my head with my arms but pushed myself forward in the direction I had last seen him.

Everything around me seemed to be a surging forest of legs and bodies and everywhere there was the roar of raised voices. Lifting my head for a moment I saw that I was only inches from Collings and pushed my way through until I was crouched on the ground beside him. I tried to stand, but was immediately felled by another kick.

Much to my surprise I realized Collings was still conscous. As I fell against him I felt his arm go over my shoulders.

"When I say," he bawled in my ear, "stand up!"

A moment passed and I felt his arm grip my shoulder more tightly.

"Now!"

With a massive effort we pushed ourselves upward and at once he released me, swinging his fist around and catching a man full in the face. I did not have his height and the best I could manage was an elbow-jab into someone's stomach. For my trouble I

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was punched in the neck and once more fell. Someone grabbed me and hauled me to my feet. It was Collings.

"Hold it!" He put both his arms around me and pulled me erect. "It's okay," he said. "Hold on."

Gradually the jostling around us eased, then stopped. The men moved back.

I was dazed and through a red mist building up in my sight I caught a glimpse of a circle of militiamen, their armed crossbows raised and aimed. The hired men were moving away. I passed out.

I CAME around about a minute later. I was lying on the ground and one of the militiamen was standing over me.

"He's okay," he shouted and moved away.

I rolled painfully onto my side and saw that a short distance away Collings and the leader of the militia were arguing angrily. About fifty yards from me the hired men were standing in a group, surrounded by the militiamen.

I tried to stand up and managed it on my second attempt. Dazedly, I stood and watched while Collings continued to argue. In a moment the militia officer walked toward the group of prisoners and Collings came over to me.

"How do you feel?" he said.

I tried to grin, but my face was swollen and painful. All I could do was stare at him. He had a huge red bruise up one side of his face and his eye was beginning to close. I noticed that he held one arm around his waist.

"I'm okay," I said.

"You're bleeding."

"Where?" I raised my hand to my neck—which was hurting abominably—and felt warm liquid. Collings moved over and looked at it.

"It's just a bad graze," he said. "Do you want to go back to the city and have treatment?"

"No." I said. "What the hell happened?"

"The militia over-reacted. I thought I told you to bring four."

"They wouldn't listen."

"I know—they're like that."

"But what was it all about?" I said. "I've worked with those men for a long time and they've never attacked us before."

"There's a lot of built-up resentment," said Collings. "Specifically, in this case the problem was that three of the men have wives in the city. They weren't going to leave without them."

"Those men are from the city?" I asked, not sure I had heard properly.

"No—I said that their wives are there. These men are all locals, hired from a nearby village."

"That was what I thought. But what are their wives doing in the city?"

"We bought them."

TO BE CONTINUED

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CARSON walked over to the sideport and looked out. There was nothing to see, but he looked anyway. He was thinking that it had finally come and that he was no more ready for it now than he had ever been. The thing old spacers feared but never talked about was happening to him. He was lost in the void with no chance of getting home and with a terrified commander who was getting ready to flip his lid.

"It's time we got out of here," he said.

"Get out where?" said Moore. His voice cracked and his eyelids fluttered up and down like little pale blinds that were out of control.

"There's a planet down there and we have a landing boat."

"No, we've got to stay here and wait. Someone will come along."

"We didn't just run out of gas on a highway somewhere," said Carson.

The eyelids fluttered faster. "Don't talk to me like that."

Carson started to say something but his mind went blank and he forgot the words. It didn't matter. They couldn't have been important. Once again he stared through the sideport at the empty black space that stretched in every direction. Now his mind was absolutely clear. Twenty minutes earlier he had been outside the ship, floating in that black space. He had gone out to hand-set a marking buoy.

Right after he and Moore had spotted the planet they had checked for it on the map. It wasn't there, so they had done what they were paid to do—prepared a buoy and Carson had gone out to send it on its way to orbit around the planet. The buoy emitted an FTL radio signal so the planet could be located whenever someone wanted to find it.

Their small ship was like an infant kangaroo that was lost outside its mother's pouch. Somewhere out in the void were the remains of the mother craft. Captain Larsen, fifty crewmen and the big, modern spacecruiser were dead. One minute the intercom had been chattering busily—the next had brought only silence. Like an umbilicus, the intercom fed comfort and security to the small ship, assured its crew that when the work day was over they could return to the protection of the mother craft.

When the intercom stopped signaling, Moore and Carson made repeated attempts to reestablish communication. They failed and this meant only one thing. Something had happened to the big ship. The umbilicus was severed and the infant drifted helplessly.

CARSON turned away from the sideport and looked at the young man who was going to be his companion in death. Moore was his superior. No, Moore had been his superior. Now neither was top man. They were both subordinate to fate, Lady Luck, lousy circumstance. They had a landing boat and a few days'

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rations of food and water and they had an impassable stretch of distance between them and Earth.

"You realize what this means," he said. "There's just you and me and what's outside that window."

Moore jammed his eyes shut. "Shut up. Don't talk."

Carson walked away. He began packing equipment and putting it into the little auxiliary boat. Moore followed him, dogged every footstep he took.

"I'm not giving up."

"Who said anything about giving up?" said Carson. "We're still alive."

"For what? What do you call being alive?"

"Just plain breathing, if that's all there is left to me. Somewhere you have to draw a line between what you want and what you'll settle for."

"You don't know what's down there. Maybe there's no air, maybe it's too hot or all frozen. We may crash."

"Maybe," said Carson.

"We can't risk it. Not until we're sure. I don't want to go down there. This is insanity. You're insane. You should have been retired ten years ago. Why did they put me with an old man who's lived his life? I'm twenty-three. I haven't had any life at all."

"Get in the boat," said Carson. He wondered what he would do if Moore refused.

Emitting whimpers of despair, Moore climbed inside. Carson strapped himself into the pilot's seat and released the auxiliary from the larger craft. They floated free and drifted away.

He didn't have much fuel. At exactly the same instant the instruments signaled a mass ahead he turned on the jets and took the boat into the planet's atmosphere.

It looked worse than bad. Where was the sun? There was nothing but fog, nothing but gray mist prowling ahead of them, ugly and impossible to see through. No sunlight, no trees or flowers or vegetables, probably no animal life.

He stiffened as Moore made a little gasping sound. Quickly he examined the screen, and then he saw it.

"An ocean," said Moore.

It looked like no ocean Carson had ever seen. It seemed endless. From the looks of it, they were coming down during a seasonal storm or this world was one big hurricane. Colossal waves rose and smashed together, formed snowy fringes that erupted into the sky and sprayed the boat with hard jets of water.

"We're nearly out of fuel," said Moore.

Through the fog Carson saw a dead-white shadow that looked like a stretch of beach. He gave the brake rockets a blast and prepared for a landing. Moore suddenly yelled and grabbed his arm. He dropped faster than he had intended.

He tried to avoid the dune that leaped up in front of the screen, but he was too late. The boat's bottom scraped several yards of sandy rock

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off the dune and gave up a sizable section of her hull.

It turned out to be a fortunate accident. If they hadn't hit the dune, they would have plowed into the bordering ocean that began a mile from where the first one ended. Their impetus was slowed by the partial collision and Carson was able to land short of a row of angry waves.

It took him a shaky minute to realize they were down. His hands dropped from the controls and he sat frozen in his seat and listened to the whistling sound of air escaping from the chamber.

Cautiously, he took a sniff. "I smell sulfur." He looked at Moore. "It's all right. The air is good. Doesn't smell so sweet, but it's good. I think."

The lights in the ceiling flickered and grew dim.

"You work on the power box while I take a look at the hull," Carson said.

Moore lay inert, his eyes fixed on the screen.

"Get up. Do as I say!"

While the younger man fumbled his way out of his seat, Carson shifted supplies to cover the hole in the hull. Most of the damage was in the rear. Two cases of food tins had dropped out when they hit the sand.

Wherever they were now, they were gone, along with the flashlights, flares and mattresses.

He scratched his stubbled cheeks and thought about what was outside. "There isn't more than a mile of beach between those oceans," he said. "It must be no more than a sand bar. We'll be able to take a look outside at dawn." He lay down on his seat and stared at the screen. His stomach complained. There was one carton of rations between them.

THE medical belt strapped around his waist pinched him and he shifted position. While he watched for any movement on the beach, he thought about the belt. Back on a planet called Earth a man named Stanton had fastened the belt on Carson's body and had said a few things as he did so.

"Don't ever take it off. No matter what happens, wear it."

"Sounds important," Carson had said.

"Call it the Physician. It's miniature but mighty. It knows every alien bug we've ever picked up. Nothing can kill you."

"Barring death?"

Stanton hadn't smiled. "We don't know the Physician's limitations. You aren't feeling any pricks but it's putting monitor wires into every essential part of your body. It carries more cures than you ever heard of. It can think, diagnose, prescribe and deal out the medicine."

"Sounds like a miracle worker."

"It's the Physician."

"The master of my body?" said Carson.

"Maybe more than that," said Stanton.

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"You mean my soul, too?"

"Make jokes. The Physician exists to keep you alive. Your suit is supposed to protect you from alien environments. What happens if the suit springs a leak? Pressure, heat, gas, chemicals—the Physician can prep your body to resist them if you aren't exposed to them too quickly."

"What about something that kills me slowly?"

"It won't," said Stanton.

"You're sure you aren't dreaming?"

"I know what went into this thing. What I don't know is exactly how good it is. But it was made to keep you alive and it will do its job come hell or . . ."

The last thought made Carson jerk upright in his seat. Damn Stanton and the medical belt. There were no problems of pressure or heat here, only the big ones of certain starvation and probably more alien bugs than a computer could count.

He looked at his watch and realized he must have dozed. It was growing lighter outside and he could make out the waves thundering onto the beach. Moore was doing exercises in the space between the seats.

Carson got up, went to the rear of the cabin and opened the food case. There had been eighteen tins the last time he checked. Now there were six. All the beef was gone. He turned and looked at Moore.

The younger man's breath sent puffs of vapor into the air as he did knee bends. Strain and desperation were on his face. He tried to finish a bend and get upright again. At the last moment he grabbed one of the seats and threw himself across it.

A wave of dizziness hit Carson. He swayed. "I expect you to share those cans of beef with me."

Moore lay on the seat with his head buried in his arms. "I need more food than you."

"We're going to share it—right down to the last bite."

Moore only buried his head deeper in his arms.

Carson opened two tins of fruit and ate. After that he pulled his hat down over his ears, stepped out of the cabin and pressed the steel door shut behind him.

HE WASN'T prepared for the wind. It was full of hard rain that found its way into every opening in his clothing. The sound of it was worse. Its screech, as it hurtled across the beach at him, entered his head like a million knives. He staggered away from the boat and at the same time tore pieces from his handkerchief and stuffed them in his ears. This muffled the sound a bit so that instead of tearing his head apart it rumbled up and down every nerve in his spine.

His feet made holes in the sand as he walked along the saturated beach. Behind him stretched a line of puddles. The ocean was a heaving mass. Whitecaps rose in the air and ran toward him. He gave up trying to

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protect his face from the spray. There was no defense against such a planet. There had to be germs in his body, old and new, and the Physician must be working overtime right now. It was all a waste of time. There were no cures for hunger and fear.

The beach was dotted with dunes and he sat on one and thought for a long while. What about a raft? A useless idea. Even if there was anything on this world besides oceans and sandbars he and Moore would drown before they got a hundred yards from shore.

His legs grew numb with cold and he realized water had soaked through his pants. It poured into his boots as he stood up. Sick and miserable, he dropped his chin to his chest and shut his eyes. There was no way out. This little wet patch was going to be his grave.

He shuffled back to the boat and knocked on the hatch. The sound was absorbed by the wind and he knocked harder. He sensed movement on the other side of the panel, knew Moore was standing there with his face touching the cold steel, listening to him. He thundered on the hull with his fist.

"Go away," yelled Moore.

"Open up."

"No."

Carson swayed. The wind knocked him off his feet into a puddle. He scrambled up and threw himself at the boat. "Let me in."

"Pay me first," cried Moore.

Carson bent down and a quart of water flushed from his coat collar. Placing his hands on the hull, he pushed and kicked.

Fog licked at his neck. The wind at his back became hands that tried to pull him down to the sand where it could lash him to shreds; the howling gale became a single shriek that threatened to shatter his brain. His fear built shapes that stalked him through the mist. They took hold of him with inhuman fingers, drew him away from the boat. He heard a sniffling sound. Pushing his face into the storm, he opened his eyes wide. He found himself crouched on the sand with his body turned to the water, and he realized that his legs were making weak movements forward. He screamed and leaped at the boat.

"Let me in!"

"Two cans of food," said Moore.

Again he smashed at the panel.

"The food should be mine," said Moore.

His fists were bruised and bleeding. "Two cans," he gasped.

"No, by God, I want it all!"

"You can have it all."

The door swung open. A heavy boot caught him in the face as he fell forward.

IT SEEMED that a long time passed before he came to consciousness. When he opened his eyes he found Moore on his knees beside him, staring intently down at him. There was a gun in Moore's hand and

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there was fear in his eyes.

"You stopped breathing for about five minutes. I knew you were alive, but you weren't breathing."

"Get away from me."

"How could you do it? How could you live without breathing?" Moore began to make gagging sounds. Putting his hand over his mouth, he started to heave.

Carson grabbed the gun and climbed to his feet. He threw the gun at the wall, fell onto his seat and held his aching head.

"I'm sick," Moore gasped.

Carson closed his eyes. His head hurt, his stomach ached and he couldn't seem to get enough air into his lungs.

Staggering to his seat, Moore dropped into it like a limp bundle. "You were so worried about the food. You needn't have been. It makes you sick to eat."

"We can't be sick," said Carson. "We're wearing the medical belts. We're just in a state of shock."

"This whole planet is in a state of shock. It doesn't like human beings."

"It's just another planet."

Moore leaned over, stared at him. "How do you feel? Inside, I mean."

"Cold, hungry, thirsty, miserable."

"I feel like a balloon that's about ready to pop. The pressure is all through me, in my legs, my arms, my chest and head. I keep thinking the next breath will finally do it, open that hole in the top of my skull and everything inside will go up like a firecracker. I start to pick up something and suddenly my fingers don't work—or I start to scratch myself and I find the itch is in my fingers or my arms—or it's inside my brain where I can't get at it—"

"Shut up," said Carson.

"You feel it. You're scared, like me. If it hadn't been for you I wouldn't be here, but I can't kill you because I don't want to be left alone."

"We're both scared. If you'd get hold of yourself we might be able to figure something out."

"We don't have a prayer. There isn't anything on this planet but water."

"Go to sleep," said Carson. He closed his eyes, made himself lie flat on the seat. Exhaustion swarmed over him and he felt himself slipping down a dark slope toward sleep. He forced himself awake long enough to take a look at Moore. The other man lay on his back, his eyes shut. He looked dead. His chest was still. He wasn't breathing. But Carson knew he was alive.

Once he sat up, torn from a sound sleep, to find Moore fumbling at him.

"Did you hear it?"

"What?" said Carson.

"Someone called me."

"I was talking in my sleep."

"It wasn't you."

Carson dreamed he was lost in a black cloud, his weightless body drowned in fog. Stretching his legs, he felt his foot touch something. Frantically he groped for it. His fingers reached out, his body ex-

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tended. He got out of his seat and stood up.

"Where are you going?" said Moore, his voice frightened.

"Home."

"I am awake."

He opened the door. Moore leaped from his seat and gave him a violent shove.

"Go, damn you! Whatever is out there can have you, but it won't get me."

CARSON pitched forward to the sand. Water filled his mouth. Wind swooped into his ears. Spray lashed his face. He awoke with a scream. Staggering to his feet, he walked toward the ocean. His foot touched the roiling surf. He took one last breath before going into the waves. Water closed over his head and the tide grabbed his legs and drew him down into a dark universe of suffocating pain. As he opened his mouth to inhale and put an end to the pain, something encircled his waist and began to take him upward and away from the grave. He struggled, but the arm was too strong.

Abruptly he felt the wind on his face. He was still fighting as he was taken from the sea and carried ashore. There came a steady pressure on his back and then he forgot everything in his struggle to keep from choking to death.

At last he rolled onto his back and looked up. There were two of them, and their brown, scaly skins shone in the dim light. The scales shifted as they moved. Each stood six feet tall on two legs that ended in broad, web-toed feet. Each hand had three webbed digits. The heads were large. The eyes protruded. There were double indentations for nostrils. They had wide mouths and jutting chins. Long slits opened and closed where their ears would have been, had they been human, and similar slits moved on their sides.

"Fish," said a hoarse, insane voice. Moore came swiftly across the sand, the gun in one hand up and aimed and before Carson could cry out, the shot sounded. One of the aliens dropped to the sand without making a sound. Its companion stepped back but made no attempt to escape.

"Goddamn you, you killed it," cried Carson.

"What did you think I meant to do?" Moore asked as he scrambled on over the sand. "Keep your eye on that other one." He grabbed a knife from his pocket, lunged onto the fallen creature and carved a deep line in its leg. Hacking off a chunk of flesh, he raised it to his nose and sniffed. With a curse, he hurled it away. "Stinking animal," he yelled and drove his knife into the carcass.

The other creature sprang at him and wrapped its fingers around his throat. Moore sank the knife into its shoulder as he fell. Yanking it free, he raised it to stab again. Carson hurtled forward, hit him with a fist and knocked him onto his back. The

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creature tried to reach Moore's throat and Carson took it by the leg and hauled it away a few yards. He turned just as Moore rushed him. This time he punched with all his strength.

Moore lay on his side, blood gushing from his nose. For an instant he looked as if he were going to attack again. Instead he turned onto his stomach and crawled away toward the boat.

Carson knelt beside the wounded creature. The inner sheath of its double-lidded eyes slid up and down as it watched him. He shivered and tried to shield his face from the wind with his coat collar. As he reached to touch the scaly body a sudden pain ripped through his chest. He coughed, vomited. Clawing at his throat, he fell across the creature and blacked out.

Two alien hands were kneading his back and neck when he regained consciousness. He rolled over. The alien stayed beside him, blinking its double-lidded eyes and gently blowing water from its gill-ears. It watched him with quiet interest.

"Get out of here," Carson said weakly. "That crazy Moore will kill you just for fun."

The alien blew water and kept its eyes on his face.

"You're in the wrong place to have that big head," Carson whispered. "Who ever heard of a fish with brains?" He drew his knees to his chest to relieve the pain in his stomach. Spray slapped his bare head.

He hunched against a dune and tried to wish he were dead, but within him a spark of insanity flared and he knew he wanted to live. He kept seeing fields of Earth shimmering in heat waves, deserts scorched from the sun, pots boiling over open fires.

He hated to let go. There were still things he had to think about, questions he wanted to find answers to, places he wanted to go.

"I don't need you," he said to the alien. He pointed to the ocean. "Go on, get out of here. Go home." The creature obeyed. With fluid motions it turned and entered the water.

CARSON lay back, careless of the fact that the wind and spray battered his unprotected face. It made no difference. He was too old, too human, too fragile to meet this planet on its own terms and survive.

He thought of Stanton, spoke aloud to a man millions of light years away. "What now, mister miracle worker? There's no cure for the incurable, you know. Why did you waste your breath? But it's funny. Even at this stage of the game, I can't help wondering. A machine, being a narrow-minded idiot, doesn't know when to quit. What does it do when its primary function turns out to be impossible? Does it have a nervous breakdown? I wonder . . ."

He must have slept, for when he opened his eyes the faint light in the sky was nearly gone. He was aston-

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ished that he was still alive. A cautious inventory of what he was feeling inside made him sit up in bewildered alarm. It wasn't possible that he could feel so well. He ought to be burning up with fever, ought to be lying in the mud and hacking out his lungs.

He started to get up and felt the seat of his pants rip. Carefully, he stood up straight. For a moment he swayed with vertigo and then a warm glow began to radiate inside him. New energy flowed through his back and legs. It scared him. It wasn't normal. He liked it, but it was wrong. He should be dead, stretched out in the puddles like a wet sock.

"What the hell?" he said. "What's—"

Something happened to his voice. He opened his mouth to yell, but he couldn't make a sound. His jacket gripped him across the chest like a vise and he took a few stumbling steps, tried to curse. He tore off the jacket and threw it to the ground. Before he had time to tell himself that he had lost his mind his feet began to hurt. The boots were crushing them.

Hopping in awkward circles, he rid himself of his confining clothes. When the wind swooped upon him he snarled at his insanity and tried to put the boots back on. All at once he stood still. He trembled with shock. His heart pounded.

After a long look at the foot he had been trying to ram into his boot he sat on the sand with his arms wrapped across his chest. Finally he had another look. His foot was turning a dark brown color. Between the thickening toes a sheath of skin was beginning to form.

He fell face down in the sand and covered his head with his arms. He wanted to crawl inside the planet, conceal himself in it, hide from the atmosphere, the light, his own horror. He dug in with his toes and felt the sand grate against the new skin growing there. He had a disease the Physician couldn't combat. Not once had he believed the machine was a miracle worker—and he had been right.

He raised his head and looked into the dim light and the planet closed about him like a living thing. Death moved up close and he squeezed his eyes shut and waited for the terror that would come.

Narrow-minded machine—give it several orders but make one the most important: keep this mortal package alive. Put all the elements you could think of at its disposal; narrow-minded machine would naturally play God.

Master of my body, master of my soul. I have only one being. Not two. A master of one is the master of the other. Have I got that correct? Have I forgotten something?

IN THE chill gray light of the reality around him he abandoned Earth and all it had meant to him. There would be no escape from this

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world. Earth was another dimension that would never come his way again. They no longer belonged to one another.

His body lengthened and filled out. The pores of his flesh opened and grew new tissue, a tough and durable material that cut the wind's brutality and accepted it like a balmy breeze.

He stood on his feet, naked but rapidly becoming clothed with the exterior that he needed in order to survive. Death fled away from him and he laughed without sound.

He looked at the boat and the thought came to him that he had to go to Moore, tell him what was happening, make him understand that this was what Carson had meant when he said that somewhere a man had to draw a line between what he wanted and what he would settle for.

Effortlessly he ran across the sand toward the boat, raised a hand to rap against the panel. His hand froze in the air. Sorrow billowed in him as he stared through the open door at the figure stretched out on the cabin floor. The gun still in his fist, Moore had a little bloody hole between his eyes.

Taking the gun from the limp fingers, Carson laid it aside and examined Moore's hand. He saw the telltale broadening of the palm, the web that had begun to form by the thumb, the darkening of the skin.

He left the boat and swung the door shut behind him for the last time. For long minutes he stood looking at the craft that had brought him and the dead boy so far from the mother ship. Moore had believed that being a conformist was more important than being alive.

The spray washed over him with exhilarating touches, the wind cooled his body while he waited on the sand. The muted sounds of the planet were music to his mind. He waited, breathing softly at first and then not breathing at all. When it was finished, he knew, and he looked down at himself. What he saw pleased him well enough. It was a good body and not unhandsome to his eyes.

The medical belt felt a little tight. With a flick of a finger, he loosened it a notch. He stared up at the fog. Somewhere out there in the void spun a small green planet. The people on it didn't know the exact meaning of life and for the first time in their existence they hadn't insisted that they did. They created a thinking machine that owned an open-ended philosophy. The Physician had no prejudices.

Had Stanton known? Maybe he had guessed. If the Physician would not allow a man to die . . . but this sounded like such a preposterous boast. Yet, suppose it were fact.

What if ?

Carson walked toward the ocean with an eager step. The sky was dark, and the spray lashed the barren beach as the newly born being sank into the depths of his new world.

★

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GALAXY BOOKSHELF

Theodore Sturgeon

THE most surprising writer I've run across in years is Angela Carter. One might also say "colorful" and "unusual" and a good number of other things, including just plain "good." But "surprising" is exactly the right word, all through *Heroes and Villains* (Pocket Books, 95c). When people speak in her work, you don't know what they're going to say; when they act, you will be surprised at what they do. There are many other good things about Ms. Carter's attack on narrative—her vivid color, her familiarity with her scene, the unexpectedness of her characters and plot development—but it is the recurrent surprise that is her hallmark. This book was published three years ago in hard covers and well over a year ago in paperback and I did not see it at the time of either release, but damned if I'll withhold a review of it for that reason—it's too good a book and you deserve it. The publishers list three other books by Angela Carter; I must assume that they are mainstream—whatever that really means—but this one, (surprisingly) called on the cover "a gothic fantasy of the future," deals with a post-holocaust situation in which a few neat stockaded villages have been organized by Professors—anachronistic research scientists and educators with their own militia—and an outside world of raiding barbarians and certain others—mutated, sick, rotten, horrible. The story is Marianne's. She grew up, daughter of a Professor, in one of the villages and was a witness, more than once, to raids, until one day, not quite against her will, she rode off with the raiders . . . and not

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one more word do you get from me about the story. About the wandering-across-the-line of mainstream writers, however—and the wandering goes both ways—I have nothing but applause. Personally I have always felt uneasy with the hardline, stonewall definitions of sf, a field toward which I was drawn originally because it seemed to have no horizons, no limits at all, like poetry. I'll have more to say about that later, but for the moment the surprising Ms. Carter gives us an excellent reason for dissolving barriers. *Heroes and Villains* leaves me parched for more Carter, and lo on her flyleaf are the names of three more works: *Honeybuzzard, The Magic Toyshop,* and *Several Perceptions.* I shall cross that barrier, if indeed there be one, to find and read these books, and may denizens of the deeps of the mainstream, baited by something we have done, be led to paddle over here. We'll all benefit.

ANOTHER fine delineator of character is Robert Wells, whose *Right-handed Wilderness* (Ballantine, $1.25) is a real find. Meet Shroud, aging, loving doctor, and the urgent, earnest macho investigator Bart Reve ("Don't call me Mister Reve. I am not half a man; don't use half my name."). And above all, Selinda, whose love for and with Shroud is something to wonder at and wish for (let the prepositions fall where they may). The closely woven strands of his intricate plot leave no loose ends—overall, it makes no pretensions beyond melodrama and it is that of the highest order. The science aspect is ingenious, unusual, reasonable and provocative. It's the kind of book that makes a buck and a quarter worthwhile outlay—you pay more for a lousy movie.

IN A peculiar and doubtless unjust way I am getting a little bugged at Roger Elwood. He has so many contracts going with so many publishers that he threatens to corner the anthology market, driving out other anthologists with other approaches. I would hate to see him, at his very best, threatening my access to Silverberg, Disch, Knight, Carr, or Harrison/Aldiss, just to blurt out an incomplete list. Yet it must be said on the hardworking Mr. E's behalf that he has been able to bug certain publishers, some of them small, remote and unknown to most of us, to enter the sf area, to their benefit and certainly, by expansion of the market, to the benefit of the writers. And an argument bridging both points of view, pro and con: does the proliferation of anthologies make the cream at the top creamier—or dilute it? Do the anthos make it tougher for the magazines, or are they better because so much of the slush-pile is drawn off to the books? Well—wherever the argument goes, whatever the fate of either outlet, boom, bubble or bust, the fact remains that when Elwood comes up with a good one it's very good indeed viz. *Future City* (Trident Press, $7.95). Will you

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look at this cast of characters: Foreword by Simak, afterword by Pohl, and in between, original stories and poems by Disch, Bova, Offutt, Janifer (a welcome rarity, Janifer), Malzberg *and* O'Donnell (how about that?!), Lafferty, Bill Nolan, Koontz, D. M. Price, the Bilkers, Virginia Kidd (where you been?), Scortia (a harsh hard heavy one, this), Frank Herbert, Zebrowski, Silverberg, Hensley, Robin Schaeffer (a fine tiny sharp little thing), Thomas F. Monteleone and Harlan Ellison. So many of these stories are downbeat, some speak of hopelessness—and yet for most of them there's an underlying regard for the city and what it means, has meant to all of us. More than one of these authors say the city stands, the people die . . . but they say it with respect. Some say the city dies, the people die, too. Some say the city dies but the people live. Reading all the way through to Pohl's beautifully written afterword is quite an experience . . . and let no one, at any stage of argument, say Elwood can't put together a big one.

TERRY CARR certainly ranks as one of the most proficient editors in the business. What he looks for—further, what he gets by finding, by persuasion, by demonstration and sometimes, I think, by an almost unholy luck—is a kind of literate and thought-provoking story bearing a special texture. He cares about science and about fiction and about science-fiction; his parameters for the latter are rather more broad and inclusive than many of his colleagues', which is, I think, a good thing. In any case, his personal stamp on an anthology is as distinctive as a fingerprint and, after having read two of them, you could spot a third with the titles worn off. *Universe 3* (Random House $5.95) demonstrates the point brilliantly. A long novelette by Gene Wolf is a triumph of the unexpected, full of disturbing disorientations, both for characters and the reader—and yet is flawlessly consistent. It's called *The Death of Doctor Island* and will surely be in the running at award-time. In addition there are stories by Effinger, Silverberg (ringing more changes on the go-back-and-kill-your grandfather theme than anyone has ever done before), an absolutely enchanting

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fable by Ross Rocklynne (who was writing sf before most of his readers were born), a brand-new Pangborn—always something to celebrate—writing about the possibility, some time after the "Davy" period, that the world may be round. Then there's Ed Bryant and Gordon Eklund, each with a fantastic female, each with her special passions and compassions. All original, of course, and when I say original I mean just that.

DID you ever hear of a book called *A Wrinkle in Time*? I happen to know a little of the back-story on that, and tell it sometimes when I teach writing and sometimes to zap beginning writers who are sulky after a rejection. Madeleine L'Engel wrote it, after selling one mainstream novel which was what's called a "critical success," which means nobody made any money, but at least the writer is now an Author. Miss L'Engle then wrote *Wrinkle*—not for any special market or genre, but just writing well a story she cared about. She submitted it and it bounced. It bounced again and still again—it was rejected successively by 28 publishers. No misprint that—I said two dozen plus four. Her husband was—is—an actor, and things at that time were not so dewy in show biz either, so they both said the hell with it, writing and acting both and, scraping up every available sou, they opened a crossroads general store in the wilds of Connecticut. Nine *years* later something moved Miss L' to resubmit the book and it hit. It also won the Newbery Medal as the best children's book of the year, which says something about book awards and I suppose about the contemporary child as well. It wasn't written to be a children's book; what it is is science fiction of the finest kind, where the science is intriguing and the people in it real and care-able about. Anyway it was followed by *The Arm of the Starfish* and now by *A Wind in the Door* (Farrar, Straus & Giroux, $4.95) and I urge you to get these books and read them. It's high time and past time that this truly beautiful writer gets the recognition in our field which she deserves.

A CONCENTRATION of Robert Silverberg is a heady experience indeed. He is completely a liberated writer, by which I mean . . . Well, let's put it this way. I carry with me at all times a silver symbol, the letter Q with an arrow through it, the name of which is "Ask the next question." It means that no matter how good a situation may be in which you find yourself, there is some significant question that may be asked—and you'd better ask it, because if you don't, or if you can't find it, you're *dead.* And if you ever reason yourself through to an answer and you can't or won't ask the next question, you have ceased to be alive. It means what Charles Fort meant when he wrote, "Any answer is not necessarily the only answer." The symbol is that of all that is ongoing, mutable,

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life-oriented and fearlessly curious, beyond prejudice or preconception. So: Robert Silverberg's mind seems to have been branded with this symbol and it glows through everything he has written recently. It certainly illuminates the contents of *Unfamiliar Territory* (Scribner's, $5.95), a collection of 13 of his previously published stories. (The galleys I have do not indicate if any of these are original; but some are new to me.) Some, like the celebrated *Good News from the Vatican*, you may know well; one, *In Entropy's Jaws,* is quite the most fascinating exposition of the nature of time that I have ever read. There isn't a bad story in the lot; Silverberg can, I think, do anything he wants to do except that.

A RECENT conversation I had with our new Managing Editor dealt partly with my basic view of sf—what it is I look for in the books and stories I read; or, when you come right down to it, what my definition of science fiction is. Well, I think you have a right to know.

I wrote an essay for the New York *Times Book Review* a while back, the thrust of which was that no definition to date fails to leak, and that the nature of the beast is that it can't be defined. On the strength of this I was asked by the *Encyclopedia Americana* to write an article for them defining it. Well, I tried my best, and essentially what I wrote was this: that if you go to the dictionary for the definition of the word *fiction*, you'll get fairly satisfactory answers, but if you look up *science* you will get (as in the big Random House Dictionary) six definitions which deal with systems and systematics, with the arrangement and methodology of data. I found this profoundly unsatisfactory; I can think of a long list of truly great sf which does not immediately concern itself with these strictures. So I went further and looked into the etymology of the word "science" and found that it derives from the Latin *scientia,* which means, not "method" nor "system" but *knowledge.* The concept of sf as "Knowledge Fiction" satisfies me completely. It permits the inclusion, for example, of *Lord of the Flies* in the sf category because of its profound investigation of the origins of religion and secular power in a human society; it even puts Kurt Vonnegut where (dammit) he belongs.

I have this addendum, one of those vague but poignant definitions like "Love is when . . .": If you have a story and yank out the science (knowledge) aspects, and the story falls apart, it was sf. If you have a story and yank out the science (knowledge) aspects and a story still exists, then you have that cowboy story that occurs on Mars instead of in Texas.

All of which I have said before elsewhere, but perhaps it's worth repeating here. See you next month. ★

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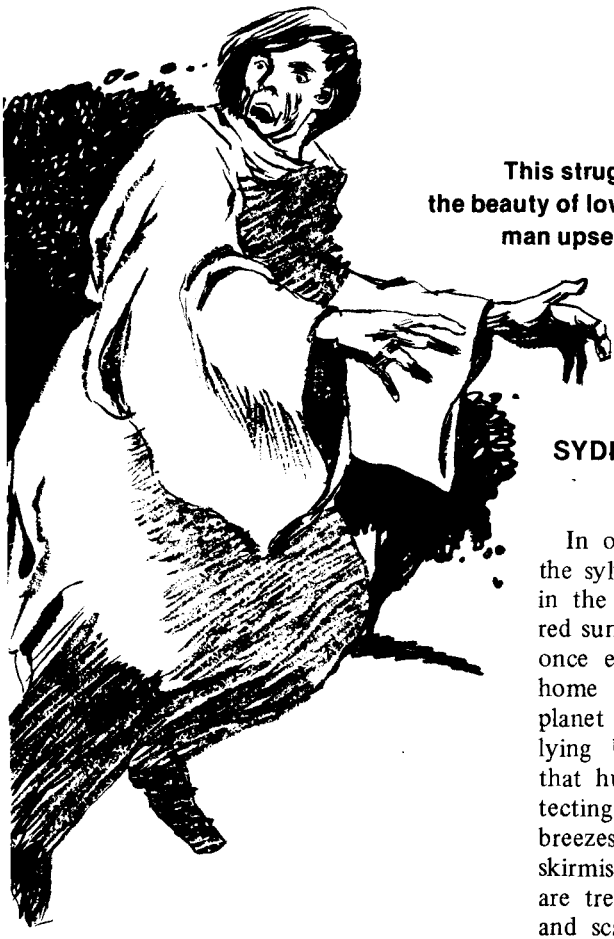
SWEET SISTER, GREEN BROTHER



This struggle for survival had all the beauty of love. Would encroaching man upset the delicate balance?

SYDNEY J. VAN SCYOC

In one arm of the universe the sylvan globe of Narr spins in the gravity web of a small red sun. This realm, which is at once environment and being, home and inhabitant, is a planet cloaked largely in close-lying broad-leafed vegetation that hugs the moist soil, protecting it from the thirsty breezes and drying winds that skirmish Narr's surface. There are trees here, too, that loop and scallop across the face of the planet in long unbroken

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bands. These bands interconnect, so that nowhere do they have beginning or end.

The trees grow thick, sheltering broad channels that carry water. And if one possesses a certain awareness, stepping beneath the trees one will perceive that these waters offer a murmurous refrain as they pass. *Shelter me, green brother,* they say. *I bathe your roots in moisture. I receive your life's fluid when the sky kingdom Fliiyr threatens. So spread strong limbs to shield my vulnerable body. I am your flowing sister.*

And if one brings awareness, one will perceive that the trees answer, *Flow, sweet sister. Bring me the moisture I crave. When Fliiyr rumbles, receive my precious essence and carry it safely in your arms. See how I defend you? I am your green brother.*

This is the communion that passes from trees to waters and back again, a murmurous refrain that has comforted and reassured through the ages. But today's green brother's sentinel leaves send down intelligence. There is a change in the air. Light lessens. Fliiyr's restless breezes draw back into stillness. And there are other, more subtle and ominous indications.

Storm threatens. The trees know immediately. Their capillaries contract. The precious fluids of life are expressed, boiling out into the soil, from there quickly joining sweet sister in her channel. *Receive, sister,* the trees plead with woody urgency. *Cherish these fluids in safety until I can drink them back. Storm is near.*

The waters swell and thicken, becoming dark. *I cherish, brother. Protect me . . .*

The sky rumbles. The air darkens. The voices of Fliiyr bellow across the land, crackling, damning. Jagged white fingers reach down. Winds appear, howling from dry throats.

Fluid safely discharged, the trees hunch stolidly between sweet sister and the skyborne menace. There is no interchange between brother and sister now. There is only fear. Storm stalks and hunts across Narr.

I

BARRETT paced settlement grounds. Her party had stepped asoil six hours ago to greet its new surroundings with tense-lipped silence. Now, at midafternoon, individual members continued to dart uneasy glances at the sky. Barrett looked up. The sun was a rose-red egglet in a pale violet sky. The ground where they erected the first

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domes was flat, densely carpeted with unremarkable vegetation. A line of trees grew in the near distance. Deep beneath the trees flowed the stream from which they already drew drinking water. Certainly there was nothing here to stimulate anxiety.

Conversely everything was here. There was the jarring unfamiliarity of open space, of harsh sunlight that lanced the eyes, of drinking water that carried no expected chemical taint. And there was the emptiness of an uninhabited world, the terrible barren stillness that dissolved every uttered word, purging it from existence.

Cham Diallo, slight, his head shaven except for a single long braid, approached, prayer robe on his arm. He offered: "I am ready to inspect the fields, Headsw'an."

Deliberately Barrett relaxed taut facial muscles. "Good." She unmoored the hoverscooter. Lofting, she held the scooter briefly above settlement grounds. The headsman's dome was already fully assembled. Three of the twelve dorms would be up before dark. Satisfied, she took the scooter planet-north.

Native vegetation had been burned back from the edges of the preplowed acreage. Landing, Barrett paced across the scorched apron. As she bent to study the exposed soil she was keenly aware of responsibility. The settlers had been provided with food, materials and supplies sufficient to insure survival for five years. Within those five years, they must prove they could survive here indefinitely by their own efforts. Otherwise they would be returned to the warrens of CityAmerica and to the bottom of the planet-party list, those of them who chose to try again.

Barrett stood. We'll make this world produce, she vowed. She turned. Diallo, prayer robe on his shoulders, was kneeling.

When he rose she spoke briskly. "We'll hike the agtechs out tomorrow. Offhand I don't foresee any amendment to Klass's cultivation schedule."

They had already lofted again when Diallo drew her attention to the sky behind them. Minutes before it had been pale violet. Now it was purple with cloud. As they hung, watching, darkness folded arms around the sun.

"Storm." Quickly Barrett skimmed toward the settlement. "I want everyone in the headsman's dome, Second. We don't have rods on the dorms yet."

When the scooter touched down wind fingered Barrett's hair and a sulky darkness claimed half the sky. A few of the party stood slackly, cloud-darkness in their eyes. Others scurried. Juvenile Director Laer toddled a clutch of children past.

Quickly the wind ceased to finger and began to whip. At a distance a bright slash of white briefly united cloud and soil. The sky grumbled and spat moisture into Barrett's eyes.

She maintained calm as she saw

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the last of her people into the big dome. "No cause for alarm. The grounded rods will protect us from electrical discharges."

They secured dome doors and the sky turned black, offering dramatic contrast for the lightning that lit the horizon. A black-bellied beast, the storm strode toward them on flickering legs. Isolated flurries of moisture spattered clearplas panes but were quickly sucked back into the air.

Barrett turned. Her people had been briefed. They knew what it was that prowled outside, knew that although it was more severe than any storm they had ever experienced at the bottom of CityAmerica's concrete canyons, its flashing tongue could not reach them in the dome. But facts were of the mind, fear of the blood. Barrett paced through the gathering, offering assurance. Diallo's Order of Confluence had claimed the largest storeroom. The mystics knelt in a bright-robed circle, bowed heads making them one. Their twenty voices, combined, created an airy whisper.

A summons from the hallway: "Headsw'an! Disturbance in the second conference room."

Reaching the room, Barrett was greeted by a dozen frozen faces. Keef Zinc spun, narrow features fierce. "Head! Sparling sent my girl for water!"

"I detailed Vella and Carlo Hegg to fetch more water before anyone saw the storm coming," the little woman defended herself quickly. "I didn't realize they were still out when we were ordered to take cover. I—"

Barrett turned back to Zinc. "You've checked the entire dome for them, citizen?"

"You think I wouldn't know if my girl was inside? She'd be with Laer, wouldn't she? Carlo, too."

Barrett glanced around. Diallo was beside her. "Get Laer."

Diallo bobbed away and returned with the burly young juvenile director. "I haven't seen them since they went on water detail," he contended. "But I briefed them on storm safety before I released them. And Carlo's got sense for two."

"Then we can assume they're safe," Barrett assured Zinc. "They've probably taken cover under the trees. I'll loft out to locate them as soon as the storm passes."

ZINC was not easily placated and now Barrett moved through her people, disturbed. True, Vella Zinc was fifteen, presumably mature enough to manage her own survival. And Carlo Hegg was an aggressively capable seventeen. But beyond the dome lightning probed and clawed. Wind bawled. If the rains that followed were extensive it might be hours before Barrett could loft in search.

However no rains attended this storm. For another quarter-hour clearplas was alternately spattered and sucked dry. Then the storm

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stalked away across the horizon. The sun, a luminous Easter egg, reappeared.

When the main door opened Zinc was among the first to push outside. Barrett stepped after him. "Zinc. Which is your work crew?"

Zinc's narrow face petrified. "Work crew can suck a rock up its tube! I'm going out there."

"No. I can't offer scooter passage. I'll need the space if anyone is injured. And you haven't been excused from duty. But if you'll name your crew leader I'll have Vella report to you when I return her."

The urge to physical disputation was apparent in Zinc's bunching arms. Barrett met his belligerent glare. Zinc deflated. "Dailey's crew. Unloading the second capsule."

"Good. I'll loft immediately." But she did not move until Zinc rejoined his crew. Then she swung low across the land. As she neared the trees she noted that, despite the severity of the storm, neither wind nor lightning had inflicted major damage.

She had almost reached the trees when Vella Zinc and Carlo Hegg struggled out of a shallow hollow in the ground. Barrett swung and settled near. Neither juvenile seemed to comprehend her sudden appearance. Their faces were twin masks, stiff, stark.

Barrett dismounted. "Hegg. Why didn't you take shelter under the trees? Didn't you see the storm approach?"

Carlo nodded numbly, a square boy with a hard, aggressive face. "We–saw it."

"We–"

"Yes?" Barrett directed full attention to the girl. Vella was tall but slight, her thin face seldom animated by spirit.

"We saw the storm when we started back with the pails," Carlo interrupted, suddenly determined to speak. "We ran back to take shelter in the trees. It was closer than the settlement. Then we decided it would be better out here. So we–came out."

Barrett sensed evasion in his answer. She decided not to press the matter immediately. "Well, load the pails in the rear bay. I'll lift you back."

"Sure." Carlo shot an evaluating glance at the girl. "But I better warn you, Head–the water's gone funny." Quickly he lugged a pail near and unlidded it.

Barrett glanced into the container, then pulled back involuntarily. A heavy odor emanated from the pail. "Let's pour a sample into the lid."

They did so and examined it distastefully. Water from the stream that had been clear and sweet earlier was gray now, clouded, repellent. "Anyone want to taste it?" Carlo suggested.

"No. And we won't draw water again until the stream has cleared. There's evidently been heavy storm runoff."

"But it didn't rain, did it?" Carlo demanded immediately. "And any-

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way, we drew this water before the storm actually came. Because we didn't see the storm till we came out of the trees and headed back."

"But the water was dirty when we went under the trees, Head," Vella interposed. "We noticed the smell then. I didn't want—and we noticed it was different under the trees then too. We—"

Carlo's gesture was rejective. "You noticed it was different. I didn't see anything."

"I didn't see anything either. I noticed it was different." She glanced from Carlo to Barrett. "It was."

Barrett nodded. "There are definite atmospheric changes associated with the approach of storm, Vella. Possibly they were intensified in the enclosed area under the trees. And although we didn't have rain here, obviously there was heavy fall somewhere upstream. That accounts for the clouding of the water."

"That's right." Carlo's tone was aggressive.

Vella's eyes fell.

Barrett sighed. "Carlo, empty the pails before you load them. I want to have a look at the stream."

The trees were giants, at once tall, massive and dense with foliage. Their lower branches created a sheltering arch. Barrett stooped to enter. The air beneath the trees was heavy with the repellent odor she had detected in the water in Carlo's pail. She peered up and around with a disturbing sense of having entered a new environment. Leaves moved on the lower branches of the trees. The sound of water was a throaty murmur. The air itself was still, hauntingly so, as if there were some unperceived presence here.

Straightening, Barrett approached the streambed. Six hours ago the water had flowed low in the channel. Now it was high. Barrett stooped and filled her cupped palm. She flicked the water away immediately, distastefully.

Storm runoff. She stood and glanced around, uneasy victim of the sensation that tongues spoke under these trees, tongues whose language she could not comprehend. The still air was not disturbed by their murmurous appeal. But she was. Briskly she removed herself from the haunted stillness.

Vella and Carlo waited beside the scooter. They lofted back in silence.

Time passed its slow hand across the face of Narr. From the high kingdom Fliiyr directed down assassins, wind and storm. But low-growing vegetation shielded Narr from assault. Dense-limbed trees protected her running waters. Brother and sister, trees and water faced the aggressor, flowing, protecting, always resuming their murmurous refrain when crisis passed.

Then brother and sister became aware of a new factor. It was one neither could compre-

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hend. It was not of Narr. Nor was it of Fliiyr. It intruded upon their age-old communion, adding a disruptive refrain of its own.

But to understand it in the singular was misleading. It was not singular. Even when the voice it employed was only one, that voice carried disparate messages. *Fight,* the messages said. *Yield, Seek, Win. Die. Seize. Give. Be.* Sometimes the voice denied the truth-reality of their being. At other times it tried, however tentatively, to merge its voice with theirs.

It was a phenomenon difficult to assimilate, particularly when consciousness was amorphous and channeled largely into the murmurous refrain of being and surviving.

Flow, sister–protect, brother . . .

Then the sun climbed up Fliiyr's pale shoulder again and there came an incursion that was many voices at once. Like a wedge, it pushed beneath the trees. It was chaos.

Fortunately it did not remain chaos. Instead the new incursion found the rhythm and flow of being and joined its multiple voices to the murmurous refrain. The invading voices became one, first with one another, then with brother and sister. The combined voice made itself welcome, a comforting part of the reassurance that passed from trees to

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waters and back again. It made itself a part of time, the time that stretched beneath the trees, the time that flowed in the waters.

But while brother and sister accepted and tried to understand, old Fliiyr stalked silently and pounced. Distracted, the trees' sentinel branches failed to give alert until suddenly bitter-dry winds chewed their tender leaves.

Storm! The trees shrieked and a spike of fear gained physical being. *Storm comes!* Capillaries squeezed. Fluid was expressed and boiled through the soil, seeking safety.

I receive! sweet sister babbled, swelling, darkening. *Shield me, brother! I flow with your life's blood . . .*

It was as if the agents of Fliiyr knew brother and sister were caught unaware. The winds were fierce. Bright-white fingers reached down, ripping and slashing. But the trees had discharged their fluid. Their flesh was dense and fibrous. Those few limbs that took fire quickly sputtered out. When finally storm passed, brother and sister bore no mortal ravage. There were only fallen branches, a single deep slash wound, and the tailings of fear.

And the incursion that had distracted them was gone. There was no alien voice, single or multiple. Gratefully green brother sucked his life's blood back. Sweet sister retired deep into her channel, clearing. Green brother renewed the refrain: *Flow, sweet sister. Bring me the moisture I crave . . .*

I flow, green brother.

No other voice joined theirs. They were content to be alone.

II

BARRETT stood at her window at dusk. The settlement was developing satisfactorily. All twelve dorms were occupied. Auxiliary sheds and shelters were in place. The fields were seeded. New confidence lit almost every face.

But when Cham Diallo spoke from the doorway Barrett's face hardened. "Take a seat, Second."

The mystic entered and sat. Before Barrett could initiate discussion her doorway was occupied again. Despite disparity of age, physique and feature, Keef Zinc and Carlo Hegg were one in attitude—combative.

Barrett's frown deepened. "Yes?"

"We want Vella pulled off water detail," Zinc informed her, his narrow face knotted.

Barrett did not feign receptivity. "I see. Have you discussed the matter with Sparling?"

"I have," Carlo asserted. "I reported Vella to Sparling two weeks ago for not doing her share on water detail."

Barrett's frown deepened. "Then

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I'm sure Sparling explained that a younger, less muscular individual's quota–"

"The only reason Vella's meeting her quota at all is because I'm doing my work and hers," Carlo asserted, his square cheeks turning to block. "The first day we went out, she worked. Until the storm. The water spooked her. After that I was the only one to go under the trees. She waited outside until I came back with the pails. I got tired of that. I told her she had to go to the stream, too. Never mind her–" He glared belligerently. "Never mind. Well, now she goes in. And she sits around under the trees while I fill the pails and haul them out. She wouldn't even carry her quota back to the settlement if I didn't make her."

"Excuse me, Headsw'an," Diallo said. "I received Sparling's report yesterday. It is in the dayfile."

"Get it then." When he returned Barrett studied the document. Carlo had spoken to Sparling two weeks ago. Sparling had discussed the matter with Vella twice. She had queried Carlo yesterday and he had refused to withdraw his complaint. Barrett frowned. "Well, Carlo, it appears the next step is to call a conference of–"

"It appears the next step is to take Vella off water detail," Carlo interrupted harshly. "You call people together, you talk for two weeks more, you–I'm tired of doing Vella's work while she sits out there getting queer about the trees."

Barrett glanced at him sharply. "Queer? Can you clarify that?"

Carlo's hard young face flushed. Apparently he had said more than he had intended.

"I'll clarify it," Keef Zinc said. "These shavepates have been hanging around under the trees after work hours." He glared at Diallo. "I know what they're trying to do. They're trying to get my kid into the Order. They're–"

Barrett's voice sharpened. "Second! Has there been an attempt on the part of the Order to proselytize *any* young person?"

Diallo's impassive features deflected the accusation harmlessly. "The Order has respected the pledge."

Barrett nodded. "I'm sure you realize, Citizen Zinc, that before we left City America, both organized religious groups pledged not to attempt to convert any minor, committed or uncommitted."

"And you think the shavepates can't snake around that? My kid was there this morning when they had their feast. Are you going to tell me they didn't offer her food? Right off their spread?"

"But how can any member of the community 'offer' food to any other member?" Diallo asked. "Our feast was drawn from communal stores. Any item belonged equally to each member of the community."

"She watched their ceremonies, too," Carlo chimed in. "They were under the trees when we went on detail. I went downstream to draw

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water, but Vella stayed. The whole time. I know because when the water changed, I ran back to—"

Barrett cut short hostilities. "Carlo, Citizen Zinc—I will speak to Sparling and Laer tomorrow. They will meet with Vella and report back to me. If we don't have rain soon, we'll necessarily expand the water detail to support irrigation. The presence of adults should prod Vella to take her leisure at a more appropriate time."

ZINC and Carlo departed unsatisfied. Barrett turned to Diallo. "Now, Second, I have reports that your group left the shelter of the trees during this morning's storm and exposed themselves on open ground." More specifically, her informants had stated that the robed mystics had burst from the trees in stark fear, most promptly throwing themselves flat, but two running all the way back to settlement bounds. "Your group certainly had the right to convene and to hold religious observances on the day selected for them. But once you went beyond settlement bounds it was your responsibility to enforce storm safety rules, Diallo."

Diallo's eyes flickered away. "Yet there is no authority in confluence, Headsw'an. Can a single expression of the Unity wield authority over those who are already himself?"

"Yes. Very easily if he is also second in command of this party. There wasn't one member of our community who didn't experience panic this morning. If we allow our people to stampede in the face of fear we may never survive to meet evaluation, Diallo." Perhaps she exaggerated. Perhaps not. She had studied planet party histories. Many groups had survived catastrophes. Others had shattered at minor blows—and perished.

Diallo bowed his head. "This morning—when the water changed I could control no one. I could not even control myself. The fear we experienced negated rationality."

Barrett's brows arched. The admission surprised her. "Then I suggest the Order conduct future religious ceremonies within the bounds of the settlement, where you can reach shelter immediately."

Diallo's eyes flickered up again, briefly dark with expression. "No. The trees best serve our purposes. And today, before the storm, we formally consecrated our temple of the waters, from which we will conduct ourselves into the spiritual flow of this world."

"That may be. But community survival takes first priority. If there are further lapses I will restrict the Order. Citizen Zinc's outburst suggests another matter. In the future I want no underage individual to observe the Order's services."

Diallo withdrew, promising.

AND Barrett was alone again—and restless. She approached the window. Poled lamps created dis-

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tinctly edged pools of light along the settlement's main footpaths. As she watched, two bright-robed mystics rustled from a dorm and disappeared into darkness. The starfield overhead was vivid and close. So close.

And Earth so far. Barrett did not yearn for today's Earth. But upon occasion she longed for the Earth that had existed before the skies had closed with photochemical pall, before the hills had been leveled and the meadows paved, before water had ceased to run in boulder-studded streams, tumbling clear and cold to the sea.

Water. She left the window. This morning the Order had fled when the waters darkened and rose. According to Carlo, Vella Zinc had been reluctant to step under the trees again after seeing the stream in storm stage. And Barrett remembered clearly the revulsion the stenchy gray waters had raised in her.

Everyone knew the stream exhibited storm change. But few realized the degree of that change. Absently Barrett flipped through the weather diary. She was troubled by the frequency with which the storm code recurred, particularly during the last two weeks. She drew down the exploration party's microreport and loaded it.

It told her little. The survey team had observed electrical storms. Nothing specific was said of their frequency or seasonality. Their intensity was measured as greater than that experienced on Earth. But the fact that the planet had been recommended for settlement suggested the storms hadn't been considered a major negative factor.

Barrett flicked off the viewer. EarthAuthority hadn't resources in ships or trained personnel to conduct more than superficial study of any prospective planet. There were many hundreds potentially compatible to human life. Their air was breathable. Water was available. Growing conditions roughly suitable for human crops prevailed.

On the other side of the equation were hundreds of thousands of humans desperately eager to escape CityAmerica and its European and Asian equivalents. Confronted with a shortage of certain resources, a surplus of others, EarthAuthority employed volunteer settlers to determine the ultimate habitability of selected worlds. Colonists were shipped and landed. If they survived and made the assigned world yield within five years, that world was habitable. If they died—or if a world refused to support them—the world was not habitable.

And the loss of human lives, the devastation of human hopes, did not enter the equation.

Barrett framed herself again in the window, inner eye intent upon planet features shrouded now by darkness: green fields, stalwart trees, clear waters, rosy sun. Certainly this world gave every outward sign of being habitable.

Yet there had been five severe

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electrical storms in their first two weeks, seven in the last two. Another fact, equally disturbing, was that none of those storms had been accompanied locally by measurable precipitation. Native vegetation remained green, its thick foliage sheltering soil that was moist and loose. But settlement fields, exposed to the air, were dry.

If no rain fell during the next week or so, irrigation would become necessary. But if the storms became much more frequent the settlers could be forced to use water that was redolent of storm runoff, both in the fields and in the settlement. Barrett returned to her chart counter and reactivated the viewer. She flicked quickly through available planetary data, finding nothing new. Perhaps they had arrived at storm season. Perhaps every season was equally stormy. Or perhaps storm season was yet to come. There was only one way to learn.

That was to endure.

She frowned. Although they were equipped with nothing as sophisticated as water pumps or piping, capsule three was convertible to a water tank. Perhaps she should assign personnel to haul emergency water stores.

That tentative decision reached, Barrett was still not satisfied. The relation between electric storm and stream disturbed her. Why, if it rained hard enough upstream to cause marked clouding, did it never rain here?

She found no satisfactory answer in sleep.

She lofted early the next morning, when the sun was an egg hatching on a purple-gray horizon. The main dome glowed in the rosy rays. Beyond, in the settlement fields, the first crops tentatively greened the dry soil. The line of trees curved gently, embracing the land, a long unbroken band that crossed the horizon in either direction.

Barrett left the scooter near the trees. Beneath arching limbs, morning was as old as time. Air was moist. The stream spoke with a gentle tongue. Barrett approached the bank. The water was clear today, low in its channel. How long, she wondered, had it required to clear after yesterday's storm?

She paced the stream bank thoughtfully, finding brief respite from her concerns. Her taut shoulders relaxed. Her effectiveness might actually be enhanced, she reflected, if she granted herself a free day, if she brought lunch and sleeping pad to the streamside and let herself become attuned to this environment, serene and calm.

She dismissed the prospect impatiently. Briskly she glanced around, seeking sign of the Order's waterside temple. But possibly Diallo had not referred to a specific plot of soil.

She left the trees and took to the morning sky. The settlers were not completely helpless, she realized. They had been issued a store of basic chemicals. It might be possible to

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find a compound that would clear or deodorize storm water. Certainly no former CityAmerican would balk at drinking water that tasted of chemical.

They were not helpless. But when Barrett set down at field's edge and saw a storm gathering on the horizon again, a finger of fear touched her, however lightly, however briefly.

DIALLO was charting supply depletions when word came across the lawn.

"Storm!"

Jumping to the window, he saw the warning darkness and fear struck him, a slashing blade. But his course of action was predecided. Diallo seized the supply log and returned it to his cubicle. From a drawer he drew a length of strong cord. Tying it around his waist, he pattered from the dome.

Settlers already converged on shelter. Diallo circumvented them, ran down the pathway and emerged at the edge of the settlement. Wind picked at his worksuit and slapped his shaven foreskull. As he loped across open ground toward the trees he glanced up. Storm had already swallowed the sun. Now it consumed the sky. Somewhere lightning licked air hungrily. The sharp crack of thunder announced its appetite.

Diallo ran. By the time he reached the trees their upper branches whipped. Darkness swelled about him like some overwhelming force.

In the broad archway under the trees fear was a live thing. It walked, it cried. Its voice pierced the mind and seared the spinal cord, rendering the feet useless, the legs numb. Yesterday it had taken Diallo unprepared. Today he was ready for it.

He reached stream's edge and snapped the cord from his waist. Throwing himself down—the waters were high, the waters were dark: *protect me, green brother*—he secured his ankles with a series of complex knots. He could never release them without concentrated effort. At this moment, his mind possessed, his fingers numb, he could barely tie them.

That done, he crawled back until he encountered tree. He pressed his spinal column against its stout trunk, braced his head, flung his arms back to grasp bark with frantic fingertips.

Fear had no words, only voice, and that voice was piercing agony. Diallo's fingers dug into the bark. His body convulsed briefly. Then he surrendered himself. His glassy eyes fixed on nothing.

Storm bellowed. Wind snarled and tore. Then gradually, dimly, Diallo became aware that the storm had walked away. Fear faded. The dark waters seemed not so much to writhe as to run again.

Diallo hunched forward weakly. He sucked blood from lacerated fingertips. Painfully he loosened the cord from his ankles, stood and groped toward daylight. In the distance the storm retreated. And his suspicion was confirmed. The fear he

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had felt under the trees yesterday had not been his own at all. It had been external—not a cry he uttered but one he heard.

He stared back at the trees. He was not ready to accept what struck him as obvious. Humans and other animals experienced fear. But the trees?

Diallo trudged back toward the settlement. Reaching the dome, he took his shredded fingertips to the first-aid closet. They were physical proof of what he had experienced. No illusions had convulsed his body or shredded his flesh on the bark of a tree. Nor had the fear been hallucinatory. The entire Order had experienced it yesterday. Evidently Vella Zinc had experienced it, too.

In his cubicle Diallo hunched on his stool, unable to resume work. Afternoon became night. Diallo stood at the window and stared at the stars. He was of the universe, the universe of him. Today he was sentient and self-willed. He commanded intelligence and mobility. Tomorrow perhaps he would be without those gifts. He would be soil, he would be dust. Or he would be microbe, lamb, cabbage, tree.

Head bowed, he sat again. He was already tree. He and tree shared the basic unity of all matter and energy. He was already water, rock, star, sun.

It gave him no comfort. Once—a boy—he had viewed the universe from another perspective. The sun at the top of the canyon had been a wondrous separate world inviting exploration. The water that trickled from the ration faucet had been a miraculous substance, each drop a separate cloudy mystery. His own fingernail parings had held urgent questions to be answered.

Now he had to revive dormant boyhood curiosity. It still lived somewhere in him. It had to.

Barrett was in her office. When Diallo entered he was aware of her speculative glance at his injured fingers and bruised head. "Headsw'an, I would like to check out microviewer and texts."

Barrett did not answer immediately. "Second, I understand you left the settlement this afternoon when storm warnings were out."

"I took shelter in the trees," he admitted. "It was necessary."

Again she did not respond immediately. "And this time you were able to maintain control?"

"I—was," he affirmed, not sure the statement was true.

Barrett elected not to pursue the matter. She reached across her chart counter and handed him the microviewer. "Help yourself from the library. Second. It's all there."

"Thank you." Later, perhaps, he would discuss with her what he had learned today. Later, if he could find authoritative support for the validity of his experience.

And if he could not?

Diallo returned to his cubicle with his selection of microtexts.

Two hours later he flicked off the viewer and cradled his eyes in his hands, discouraged. Finally he raised

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his head and reactivated the viewer. Lips moving, he continued to read.

III

THREE days later Nellis appeared at Barrett's door, carrybin in hand. "Nell—let's see what you have."

He removed sample jars silently from the carrier. "I followed instructions, Head—as well as I could."

Barrett glanced at him sharply. "You took samples each half-hour until signs of clouding, then each quarter hour until the water had cleared?" Today's storm—the settlement had enjoyed two days' respite—had descended in early afternoon. It was near supper now.

"As far as I could, I did." His tone was trenchant. The muscles in his forearms were knotting.

Barrett examined the numbered bottles and frowned. The morning samples were clear. Pronounced clouding appeared shortly after noon. But the jars that should have contained the five subsequent samples were empty, although Nellis had numbered them and put down the appropriate collection times. The sixth jar—drawn, she calculated, shortly after the storm passed—contained dark water. Thereafter samples were drawn at the requested intervals again. They showed a gradual clearing over a three-hour period.

Barrett glanced up, disturbed. A loner, Nellis exhibited stubborn pride of endurance that made him one of her most reliable workers. Today pride obviously had not driven him to collect water samples during the height of storm. "Can you tell me why you didn't conduct the test as requested, Nell?"

"I did what you told me—as far as I could," Nellis insisted stubbornly. His fists clenched. "That's all, Headsw'an."

Barrett sighed. "All right, Nell. Drop these by Klass's shed. It's his turn now."

Nellis sighed with relief. He withdrew.

Barrett slumped on her stool. So storm water appeared at least half an hour before storm reached the immediate area and required three hours to clear. Only if storm frequency stepped up beyond twice daily would there be a definite water problem. But could she afford to gamble that that would not happen?

She could not. Capsule three had been converted for water storage yesterday. Tomorrow she must schedule a crew to fill it.

Decision reached, she remained uneasy. She ate, then returned to the dome. Light showed beneath Diallo's door. Barrett knocked on impulse.

THE mystic's face seemed older, drawn. His cubicle was austerely ordered except for the work counter. There the microviewer sat in a welter of microtext capsules.

"Research?" Barrett asked.

Diallo's slight shoulders tensed. "Yes. There are several matters of

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biological science that I–I have felt compelled to study."

"You haven't by chance touched on meteorology?" she asked.

"I–no."

"Well, I'm puzzled–and disturbed–by our storms, Second. I was led to believe they would be accompanied by rain. Not by any specific rain figures quoted in the exploration crew's report–they give none–but on the general principle that electrical storms *are* accompanied by precipitation. Now apparently they are, somewhere upstream. But not on our land. And our crops weren't bred for drought."

"Yet native vegetation shows no sign of parching," he pointed out promptly.

That was true. "Perhaps it's adapted to a lower level of moisture." She frowned. "But it's not functioning at a lower level, Second. I examined the uncultivated area near our fields this morning. The ground there is still quite moist, even though there has been no rain in the month-plus since landfall. It's only our land that is dry."

He darted a glance at the microviewer. "Plant roots hold moisture," he reminded her quickly. "And foliage shields the soil from heat and wind. So stripped land dries and erodes while covered land is protected."

"Ag unit one: erosion," she concurred. "But that same foliage should be passing soil moisture out through its leaves continuously, Diallo. Transpiration: ag unit four." She frowned. Diallo, after all, had taken ag only through unit two, then had specialized in stores management. "But that fact aside, tell me how the soil got to be moist in the first place if the storms aren't accompanied by rain here? And why aren't they? And if it doesn't rain upstream either, why do we have runoff in the stream preceding, during and following every storm?"

"It–" Diallo's eyes flickered away, troubled. "I had not thought of that aspect of matters. "I–" Turning, he selected a microtext and dropped it into the viewer. "Headsw'an, did you know that plants experience emotion?"

Barrett was totally unprepared for the switch of topic. "Plants? Like our crops?"

"I was referring to the trees. The texts tell me plant emotion was first demonstrated in Earth laboratories over a century and a half ago. Certain individuals were shown to promote plant growth just through some quality of their presence. And human experimenters were also able to communicate threat to laboratory plants and measure fright-reaction. The experiments are reported here."

Baffled, Barrett studied the indicated passages. She nodded slowly. "I suppose I've heard about the effect. But of course those experiments were done with Earth-variety garden plants. Not with anything resembling the trees down by the stream."

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"But do you not think that the principle could be applicable to the trees?" Diallo insisted. "And that they could experience fear?"

"I suppose they could," she admitted. "But—"

"Of storm?"

"Well—yes."

Suddenly the mystic's forehead was beaded with sweat from brow to braid. "And do you not think it possible for the communication of emotion to occur in the opposite direction too? For the trees to communicate their fear of storm to humans who happen to be near?"

It took Barrett some moments to grasp what he proposed. "You think—" Despite the incredibility of the suggestion, her mind was already marshaling support data: Vella's and Carlo's odd behavior after the first storm; Carlo's report of Vella's subsequent attitude: Diallo's admission that the entire Order had fled the trees during the storm; the unfilled sample jars Nellis had turned in. "Second, you stayed under the trees throughout Wednesday's storm."

The mystic examined bandaged fingertips. "Only by the device of securing my ankles and clinging to a tree trunk. There was intense fear under the trees throughout the storm. But it was not mine, Head. It came from without. It came from the trees. There was no other possible source."

Barrett nodded reluctantly. "Yes. There have been other incidents, Second." Quickly she reviewed them.

Diallo's head bobbed eagerly. "And the girl's present behavior—when the trees are at peace, Headsw'an, they communicate that too. I have felt it. Any sensitive person would, I think, if only half-consciously. That, I suppose, is why the Order selected the waterside for consecration. There is serenity there. A feeling of timelessness."

"I felt relaxed there myself." Barrett smiled wryly. "I managed to overcome it."

"But apparently the girl does not care to."

Barrett nodded thoughtfully. Was it so incredible? If, as the texts clearly indicated, a plant could react to a human's emotional state, why not a human to a plant's? "Diallo, have you discussed this with anyone?"

He was emphatic. "No one."

"Good. I want to question Laer. I've asked him to draw the Zinc girl out. He may be able to confirm this hypothesis."

Diallo agreed with patent relief.

Normally Barrett would not have summoned Laer until morning.

However the occasion was not normal.

"ZINC? I think we're growing our first nut case," the burly juvenile director informed Barrett an hour later. "She's in communication with the trees and the water. She's vague on the exact content of the interchange, but the general trend is that they care about her—care a lot."

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Sparl proposes we pull her off water detail. Better, we'd both like to amputate her from Carlo and her father, give her a chance to grow." He shrugged loosely. "How, I don't know. She shouldn't even be here—she's not pioneer material."

Barrett nodded agreement. But there was little point in decrying the inadequate screening process now. Laer's testimony confirmed Diallo's hypothesis—and there were decisions to be made. She snapped her jotter against her palm. "Tomorrow I plan to schedule an adult crew to fetch water for emergency stores. We'll reassign Carlo to field duty then, Laer, and Vella can take settlement work. And for the time being I want you to restrict Vella from the trees entirely. But make it clear that it isn't a punitive restriction. We have reason." Reason she was reluctant to broach now.

Laer's beard parted in a grin. "Good enough for me." He departed with cheer.

Bleakly Barrett wished she could share that cheer. Storms that weren't accompanied by rainfall, ground that remained moist in the absence of precipitation, trees that communicated fear—Barrett felt suddenly plunged into a sea of anomaly. The fact that she had been forewarned that such anomalies might exist yielded scant comfort.

She approached the window. Vividly she remembered today's storm. Could she in good conscience dispatch a water crew tomorrow without warning them that in case of storm the trees would communicate disorganizing fear to at least the more susceptible of them?

She could not.

Neither could she imagine now how she was going to present that warning when morning came. And the matters of rainfall, storm runoff and soil moisture unresolved, too . . .

DIALLO hung above the land, troubled. He had followed the line of trees upstream for three days, seeking rain. Now another storm moved down upon them, straddling the band of trees. Tensely he took the scooter to the surface, rolled it beneath the trees and secured it. The stench of fear was already thick in the shadows. Diallo ran from the trees and threw himself to the ground.

As he huddled there, storm began to lick and taste at the land on either side of him. Diallo could feel its hot breath on his shaven skull. He shuddered. Last night, restless, he had seen storm in dream. It had walked his private night, green-eyed, supple, and he had wakened with the truth suddenly clear in his mind—storm was a panther. And its prey? The trees. Storm stalked the trees mercilessly across the land, baring lightning fangs, howling from its black throat.

Diallo quivered as his head was briefly spattered with moisture and licked dry. Lightning and wind—claws of the beast. How was he to

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tell Barrett that what they confronted here was a skyborne predator?

Facts: he had followed the line of trees upstream for three days without once encountering a break in their solid wall; nor had he encountered rain, although he had met storm frequently and had always found the stream swollen and dark at those times; and never once had he seen storm focused anywhere but upon the line of trees.

These were facts. Barrett was a person of facts. But Diallo's facts were scanty and did not add up to his conclusion. His conclusion had come from other sources, by night.

Yet his conclusion was valid. The more rational parts of his mind rejected it, but as an intuitional person he not only accepted its truth but embraced it. Storm was a preying beast. The trees cried with fear at its coming.

Diallo cringed against the soil until the winds swept away. Then he rose, darted to the trees and released the hoverscooter. Lofting, he followed the winds downstream. He had failed in his mission to find rain. He did not believe now that there was rain, not anywhere on this world. There was only stream and trees, lightning and wind, prey and predator.

How did the fact that there were now humans, too, affect the equation? Diallo didn't know. But his unease was great, his heart troubled, as he headed back toward the settlement.

STORM! Her mind shrieked and Vella woke rooted in fear. Wind clawed her branches, lightning stung her hair. *Protect me, shield me, save me!* her mind babbled. *Storm!* Electrified, Vella tried to spring up from the dirt. But her legs would not have her. Instead her lips parted and her own voice rent the air.

Save me! I flow into your arms. Carry me, protect me, fire reaches down, wind tatters and tears! Shield me, protect me, flow, protect, carry, shield . . .

Then Vella gained her knees, pounding ears with palms. No, *no!* She hadn't meant to lose herself in the dark. She hadn't meant to sleep the night under the trees. She hadn't meant anyone to ever know she had slipped away after lights out. She hadn't meant . . .

Save me! Vella screamed again, a cry torn from her to join the other cries, to join the piercing fear, the possessing fear, the driving fear.

And it drove her. Stumbling to her feet, she plunged through the trees. *I flow into your arms. Cherish me, carry me, save me!* She ran hard against a tree and her nose smashed and ran down her face. Her eyes were blind, her mind a bubbling geyser of fear. Then her feet found purchase on nothing and she flowed. There were arms wet and cold. They closed around her. She tried to shriek again but water bubbled in her mouth. It was thick, it was terrible, it was black.

It was death.

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BARRETT was at her chart counter when the cry came across the lawn. She hurried through the dome. Search parties had been combing the trees and adjoining fields since noon yesterday for the missing girl. When Barrett reached the lawn, however, the cry resolved into, "Hover's coming!" Barrett glanced up and Second Diallo rode the sky, an insect against a backdrop of afternoon violet. His bright robe fluttered. Barrett hurried across the lawn.

The craft touched ground and hands rushed to moor it. Diallo scrambled down uncoordinatedly. Catching uncertain balance, he glanced behind him, fear on his face. "Head–storm upstream. Ten minutes, fifteen."

Barrett peered down the line of trees. Barely perceptible darkness touched the sky. "L'Abbott, I want the searchers clear of the trees before the storm arrives," she instructed quickly.

Nodding, L'Abbott loped away.

Barrett turned back to Diallo. He was breathing shallowly, his features gaunt, his eyes too bright. "Come to my office, Second."

From behind her closed door, they could hear the community taking storm haven. Barrett gestured Diallo to a seat. She spoke sharply to penetrate his obvious agitation. "Have you eaten?"

"I've eaten. I've–"

"Then report, Second. Did you find rain?" Her hand touched Klass's final report. She knew, grimly, what Diallo's answer had to be. There was no other possibility.

His eyes flickered past her, then returned and settled. He tongued his lips. "No. There is no rain, Head. Nowhere. It's all in the sky–all the excess water vapor. The storm will never release it."

Barrett rocked back, brows arching. The information was as she had anticipated. The delivery was not. "Well, I've had almost a week now to gather and consider new information," she said slowly. "And it does appear that we're dealing with the uncomfortable reality of an aberrant moisture distribution system." She glanced down at the Klass data on Nellis's storm-water samples. "Evidently what we're finding in the stream isn't runoff at all. I don't see how it could be. And Klass and I arranged some rather primitive experiments that demonstrated that local vegetation doesn't return moisture to the air by transpiration. So apparently moisture is distributed through some underground network we haven't had time to study yet. Those facts, coupled with the fact that we haven't observed rain–"

"Because a panther doesn't shed his fangs," Diallo hissed, leaning forward. "That is why the trees are afraid, Head–panthers." He tried to impress his point with glittery-bright eyes. "I am not irrational, Head. I've found the truth. The storms are predators. They stalk the trees. They use what water vapor they have to

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create lightning. They—why do they always move along the trees, if they aren't predatory? Why haven't we seen a storm focused anywhere else, Head?"

Barrett frowned. The repetitious path of storm travel was another loose fact that troubled her. "There may be a meteorological explanation, Diallo," she offered slowly. "The landscape is flat and unbroken except for the bands of trees, ours and the others that lace the temperate zones. I haven't had opportunity yet to really study the meteorological texts, but—"

Diallo shook his head emphatically. "No. Meteorological conditions may make it possible for the predator to stalk. But he would not stalk if he were not a predator."

"Second—" Barrett murmured, buying time. "Second, if the storms are predators, they don't seem to be particularly effective ones, do they? On Earth wind often uprooted large trees. Lightning sometimes set fires that destroyed whole forests. But here, where we've already seen almost two dozen severe storms, we've seen almost no actual damage. A few limbs broken, a few leaves scattered—"

"A house cat, Head. A house cat could never fell a deer," Diallo countered vehemently. "But a house cat is a predator just the same. It is a matter of disproportion of size and strength. To us the storm seems severe. To the trees, who are strong—"

"Yet you're the one who first pointed out that the trees fear storm. Intensely."

Diallo's eyes were briefly frozen, disconcerted. His lips moved.

"No, I appreciate the analogy, Second," Barrett went on quickly. "But we have to deal more realistically. We're faced with a number of anomalies we simply couldn't have anticipated." Quickly she indicated Klass' report. "What I thought was storm runoff into the stream, for instance, is an oily substance instead. It's—" Her head spun at the clatter of footsteps. Her door rattled urgently.

It was L'Abbott, his broad face strained. "Head—"

"Are the search crews out of the trees?"

"No. They've found the girl's body. The water came up. She's floating. They're casting ropes for her. They're—"

Barrett's voice rose sharply. "You didn't get those people out of the trees?"

"I couldn't. They won't leave!"

BARRETT glanced urgently to the window, then hurried from her office through the dome. Reaching the lawn, she stared up into the black face of the storm. She peered toward the trees. Any activity there was effectively screened from sight. And there wasn't time to send L'Abbott back or to take the hoverscooter out herself. Wind was already slapping and howling.

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Diallo reached her side. "Head?"

Quickly she explained. "So we have thirty or forty people under those trees," she concluded. "But if they aren't panicking now, with the storm already so near—"

"They were briefed?"

She nodded. "But if they don't have the same overdeveloped sensitivity members of the Order have, or perhaps if they're distracted or no more affected than Carlo Hegg evidently was—"

"Or if the peak of fear has not yet been reached," Diallo interjected.

Barrett nodded, turning. "Well, we'd better get inside, Second. It's out of our hands."

Inside L'Abbott's news had reached everyone. Faces were pasty, voices low. Then their words were drowned by the growl of the beast and he was upon them—black belly, flickering fingers. Clearplas was first spattered, then voraciously licked dry.

Barrett strode through the dome. Laer was in the first conference room. "The girl—accident or suicide?" she demanded.

For once the burly young juvenile director was somber. "Head, I don't think she had enough stuff to take herself out for drowning."

Barrett agreed. "She had developed dependence on the trees. She probably slipped out of the dorm, intending to return before dawn. Instead she was caught under the trees when we had that night storm."

"Sure. Scared and confused, running the wrong way in the dark—splash!"

"Well, she'd been warned, along with everyone else." Barrett hadn't much sympathy to spare.

Before she left Laer, L'Abbott found her again. "Head—the searchers are running! In the open!"

Grimly Barrett hurried to the front of the dome. The windows were massed. She pushed to the nearest. Half a dozen members of the search party ran wild. Three raced toward settlement bounds. Three others scattered along the line of trees.

She pushed back from the window. "Milario! L'Abbott! I want every entrance guarded. Don't let anyone out! If any of those runners make it this far, open to them!"

Any. The word rang heavily in Barrett's mind. The settlers couldn't afford to lose workers. Their crops would have to be hand-irrigated through summer and early fall. After harvest they intended to move into new fields, pursuing a different scheme of cultivation. They needed every hand.

Milario and L'Abbott assigned personnel to the doors. Barrett pushed grimly to the window again.

Two of the runners had regained control and had thrown themselves flat. It became apparent that a third was not running in panic but pursuing a fourth. As they neared settlement bounds he launched himself, bringing the other man down. Barrett could feel tension lessen around her.

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Only two people were exposed now, one plunging back in the direction of the trees, stumbling, regaining her feet, falling again. And the other–

"It's Orth!"

His blue worksuit appeared self-animated as he pounded past the two struggling men on the ground and flung himself across the lawn. His face was contorted, his neck corded.

The jagged white finger that reached to impale him fused him briefly into its own blinding column. His face was momentarily lost in light as every detail of the world was vividly overexposed. Then the fiery finger split and spat at the two nearest dorms, rending air. The world shook.

Reality returned. Light was gone. All that remained was two men pressed against the ground. Orth sprawled supine with head twisted and eyes vacant, and the terrible silence.

Barrett pushed from the window again. She fought to the main door. Quickly she chose her men. "Whipper, Danakil–crawl out there and drag that man in. Don't raise so much as a hand above the ground. Heads down too."

The door was opened and the two plunged out.

"Down!" Barrett shrieked, her face fierce.

They threw themselves flat and wriggled away. "Back from the doors," Barrett cried. "Everyone along the walls. If we get that man in, we'll need room."

Whipper and Danakil got him in. Laer, one of the handful who had taken med units, was summoned. Barrett and Jones spelled him working over the lax body. Despite their efforts, the body remained just that. When Barrett finally stood her voice was hollow. "We've lost two people." the words held no reality. She met Diallo's eyes. Her jaw set. Today the storm had proven a successful predator after all.

Time passed and there was still another incursion upon the union of trees and waters. And though consciousness was tenuous, channeled largely into the murmurous refrain that defined their joint existence, both brother and sister sensed the content of the incursion and were uneasy. For although the voices were chaotic in expression–*kill, save, destroy, live, conquer, own,*–they were united in intent. And that intent was somehow, in some incomprehensible way, threatening.

Uneasily green brother's lower leaves rippled. He had defended himself and sweet sister against old Fliiyr's winds and fiery fingers since the beginning of time. But this incursion was not storm. And so it did not stimulate his usual responses. His sentinel leaves did not stir. His capillaries did not compress. His fluids did not

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flow. He did not know how to defend against what he felt on the air today. He had been provided with no mechanism.

Sweet sister was equally helpless in her disturbance. Green brother did not cry, did not plead. And she did not swell and darken. Yet there was danger, dimly apprehended, not at all understood.

Then green brother became aware of assault to his lower trunk. He did not feel pain because he did not have capacity for that. He did feel a certain helpless dread. For soon his bark was penetrated, his woody fibers slashed. Even as he stood there, life's fluid began to leak from the wound. And then, at first haltingly, his sentinel leaves signaled their own movement through the air.

Their flight was brief. There was a jarring of the soil and green brother was fallen, his sentinel leaves brushing near the ground. His life's blood drained upon the soil and bled away. Consciousness lessened.

Green brother was fallen, yet he did not die. Because he was not one. Nor was he many. He was one-who-was-many and as yet only a very small portion of that union died. Sweet sister was disturbed nevertheless. Because when earth jarred, her own body was suddenly exposed. The rays of the sun reached in to touch her, only in one small zone to be sure, but the sensation was acutely unpleasant. It was not right. Never in all time had it happened. She quivered, suffered vulnerability and the violation of order. But she flowed on, even though she could voice no more than a plaintive, *I flow, green brother . . .*

The answer came. *Flow, sister, and bring me your sweet moisture. I defend . . .*

But green brother's voice lacked assurance. For now he felt his bark penetrated again, felt his woody fibers slashed and chopped again, felt his life's fluid begin to leak from still another wound. His leaves shivered. Green brother experienced the beginning of a new and terrible dread.

IV

DIALLO was completing weekly inventory on food stores when the felling crew returned to the settlement. Disturbed by the word that accompanied their return, he closed inventory, returned the books to their shelf and logged off duty.

Diallo appreciated the expediency of clearing a stretch of the streamside. Irrigation crews would necessarily draw stream water daily for the next few months. And Vella's death and Orth's had bred an atmosphere

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of vengeful hysteria concerning the trees. So the settlers had voted not just to clear passage to the water but to assert mastery over this world and its forces. Nevertheless as Diallo set across the field toward the line of trees, he was disturbed.

He hadn't walked far when the hoverscooter fluttered near. Barrett leaned out. "Ride, Second?"

Her face reflected his own disturbance. Agtech Klass was impassive in the passenger's seat. Diallo scrambled into the cargo hold.

Reaching the streamside, they hung over the scene briefly. Only three trees had been felled today. But they were giants. They sprawled across the land, limbs crushed, life's blood oozing across the bare soil to spill into the stream. Diallo peered down. An unmistakable stench filled the air.

Barrett took the scooter down and they disembarked. They were dwarfed by the fallen giants. Diallo glanced at Barrett's set face. "The odor, Head—"

She nodded tightly. "It was reported accurately. It's the storm odor."

It was, repellent and thick.

Klass paced the length of the nearest tree, took a thin plastic blade from his tool belt, and dipped it into the gray substance that drained from the tree. He squinted at his sample, sniffed it. "No need to take it back to the shed for comparison, Head. It's the same stuff I strained out of those storm water samples. That smell—has to be. Surprised the cutters stuck it out in this stench."

Barrett stared at the woody base of the tree. "So here's our pollutant, Klass." Her words fell flat.

Diallo studied them, aware that they shared information of which he was ignorant. "This substance has already undergone analysis, Headsw'an?"

"It has." Barrett's face was suddenly older. "I intended to share the report with you the day you returned from upstream, Second. But we were interrupted. And in the subsequent hysteria Klass and I decided to withhold the information from discussion for the time being." She hesitated. "The substance in the storm-water samples I had Nellis take—and evidently it comes from the trees—is by every indication quite poisonous. Possibly lethal to humans. And we suspect that if we irrigated with uncleaned water it would kill the crops too."

Diallo peered at the substance on Klass's blade, stunned. "Then each time it rains, the stream becomes poisonous?" His question seemed unreal.

"For three hours or longer," Barrett confirmed.

"The pollutant is an oily compound, Second," Klass clarified. "Doesn't ride the top of the water as you'd expect. Intermixes? Maybe colloid's the word I'm hunting. Maybe not. I only follow the procedures in the text, so don't expect me to talk like a chemmer. But I was able

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to strain a little of it out. The rest—well, who knows what happens to it when the water clears? I haven't been drinking a lot lately, that's one fact I give you without fear of contradiction."

"But if the substance comes from the trees, isn't it reasonable to hypothesize that it returns to the same place?" Barrett suggested.

To the trees. Diallo did not respond. Intensely troubled, he turned and paced to the stream's edge. Each new finding was freshly disturbing. When storm stalked the trees, they not only experienced—and communicated—fear, they also discharged their life's blood into the stream. At his feet, the fallen tree's sap oozed thickly down the steep bank, graying the water.

"Makes sense they'd absorb it back," Klass affirmed. "Now if you want to try storing this stuff for fuel purposes, Head, we could probably tap it out of the other trees before felling them. Take a little rigging—"

Barrett joined Diallo at stream's edge, shaking her head. "No. We don't have the technology for removing the stench, now, Klass. We'll keep it in mind for future development." Her features did not express the degree of optimism her words seemed to indicate.

Diallo stared at her, new information slowly taking possession of his thoughts. "This substance, the tree sap—it's inflammable, Head?"

She nodded briskly. "Highly."

He continued to stare at her, further question forming in his mind, unwelcome, unwanted. It had to be expressed. "But then why doesn't lightning set fire to the trees, Headsw'an? If the sap is highly inflammable, the entire line of trees should burn when lightning scores a direct hit upon any single tree." They had all seen lightning touch the trees harmlessly many times.

Eyes met. No one wanted to answer. "Because," Diallo supplied finally, "when storm approaches, the trees discharge their —inflammable— sap into the stream."

Klass' lips seemed numb. "But then the water itself could be ignited, Second. Because the proportion of oily stuff in some of those samples—"

"But the stream is protected from lightning by the trees," Diallo said softly.

Three glances turned upon the stream. Sunlight glinted from its freshly exposed surface. "The water is protected by the trees," Barrett said softly. "And in a way the water protects the trees too, by carrying the sap until danger of lightning passes."

No one wanted to say more. The stream lay before them, three of its guardians slain. It was Diallo who finally spoke again. "Head, does it seem to you that the water is rising?" Barrett nodded numbly. "It is."

THEY rode air back toward the settlement. "Head, I could be wrong," Klass asserted. "The samples

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I burned in the shed didn't have water content to extinguish them. But the stream—that a lot of water, Head. I've never seen water burn."

"However it is possible that lightning itself could produce some significant change in the electrical orientation of the substances in the stream," Diallo pointed out, groping helplessly through his dimly grasped understanding of chemical reactions. "That could contribute to and support inflammability."

They reached the mooring hook and scrambled from the hovercraft. Settlers hurried to shelter. Diallo turned to face the darkening sky and fear touched them. Here they had stumbled upon a survival system that had probably existed through most of eternity. Today they had disturbed that system. Perhaps they had seriously weakened it. And now the panther strode down the line of trees, thrusting his black face near, teeth bared.

Diallo entered the dome. The breath of the beast misted clearplas panes, then sucked them dry. Then the sky shattered with fiery discharges. Thunder snarled. The beast prowled the trees, licking, tasting, seeking.

He found vulnerability. He leapt suddenly astride the exposed stretch of stream. His quivering bolts struck down to the water's surface, the fulfillment of the hunt.

Diallo heard a scream behind him. "The water's burning!" He did not turn. Hands flattened against the pane, he watched flame rip down the surface of the stream, watched steam boil up, watched the trees' discharged sap flung back upon them in a cloud, watched as the trees exploded into flame. Diallo did not move, did not cry, but he felt the pain of the trees, the agony of the waters and the fierce exultation of the beast. Then the fire moved both upstream and down and the scene was lost in billows of steam and smoke.

And the fire that destroyed trees and stream was to destroy Diallo. Not today, perhaps not tomorrow. But one day soon. He knew it.

"SEE you at noon rest, Head," Laer promised as he lofted his four youngest charges and scudded to the head of the column. Barrett watched him establish course directly planet-east before she turned for a last look at the stripped settlement. Six of the twelve dorms and a number of sheds had been disassembled for transport across the plain. Settlers who didn't have a hand in their transport carried seeds and supplies on their backs, personal possessions in their hands. Barrett regretted the necessity of abandoning the headman's dome. "Maybe the evaluation ship will lift it over for us if we don't get back for it."

Diallo made no response. He stared toward the burned-out trees, devastation in his eyes.

Barrett frowned. The hike planet-east would require a week, perhaps

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longer. Then they would reach a tree-shaded stream running parallel to this one. Milario had located it by scooter. This time, when they established their settlement, they would act upon solid knowledge of planet conditions. They would not clear broad fields for planting, for instance. Instead they would remove native vegetation from narrow bands of soil, cultivating only shallowly. It might prove necessary to irrigate, but there was hope to the east.

There was no hope in Diallo's eyes. "Head, the streams interconnect. The survey report clearly states it. With each storm, damage to the trees will extend farther, until eventually it reaches us again. Until eventually the sky has consumed all the water."

Barrett's face tightened. "You just have a theory, Diallo. You won't destroy everything by expounding it to the party, will you?"

Diallo's eyes moved along the horizon. "I won't. It makes no difference now."

"Good." The party was in possession of the facts as Barrett saw them. To present them with Diallo's poetic interpretations of apocalyptic visions could serve no purpose.

They turned and walked after the others. They had not gone far before Diallo touched Barrett's arm. He pointed back toward the trees.

Silently another giant wind funnel had formed over the exposed stream. It dipped into the water and spun moisture up into the thirsty reaches of the sky, diffusing it quickly into cloud. "The wind has come again."

It had, the wind that had slain their fledgling crops. Barrett's shoulders tensed painfully. They were fleeing not just the morale-shattering devastation of the trees, the ever more vicious electrical storms, but also the destructive winds that had moved into the area like scavengers gathering around an unguarded kill.

Fortunately Diallo said nothing. He did not tell Barrett again that the sky was a predator intent upon stripping the land of water, that it had fattened and strengthened on its first meal, that now it would return and feed again until it had consumed every morsel. He said none of those things again.

Because he had promised not to say them again.

The spout dissipated, sending vicious winds whipping over the land. Determined, Barrett turned and followed the column, her eyes set upon the eastern sky. There the sun was a rosy red egglet, the sky a clear violet expanse. When the air that enveloped this planet had taken enough moisture, it had to release some of it again in the form of rain. There were certain natural laws that governed any world.

Even this one? Barrett did not permit herself to dwell on that half-articulated question. There were trees and waters and fields ahead. And her people strode like pioneers.

So would she, as long as Diallo remained silent. ★

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HER FINE AND PRIVATE PLANET

She loved the place—and loved an earthling as well!

ROLAND GREEN

YOU can't neck in a spacesuit. The best thing Sonya and I could do was sit down on a flat rock about fifty meters upslope from the instrument pack, hold hands and try to read each other's impressions through the helmet visors. This time, though, we were mostly getting a last look at the Martian landscape.

It was a landscape only a geologist could love. And Sonya loved it. It had everything I had seen on the moon—pockmarks of craters and big gashed rills, hummocks and fissures and blowholes and scattered rocks from pebble to house size. There were some geologic differences and those made Sonya love it more. Also, you were heavier. And there were wind and duststorms.

Sonya thought it was beautiful. If we'd had a year on Mars instead of only two months she might have talked me into thinking the same

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way. She could talk me into damned near anything when she tried hard.

That last day we made our pickup on the instrument pack's sampling capsules, climbed up to the rock we called the "loveseat" and got as close to each other as we could. That was one of the nice things about the new spacesuits, the skin-tight long-john variety. You couldn't get as comfortable in them as you could in shirtsleeves, but at least you didn't look and move like a drunken teddybear. In fact, Sonya was so small (and I'm only about a hundred-seventy centimeters) that she could have sat on my lap if the life-support pack on her back hadn't always been getting in the way.

We had been up there about five minutes when Sonya said, "I want to come back here some day."

"You mean right here where we're sitting? And put up a plaque reading: 'Here sat Lieutenant-Colonel Henry Jacobs and Sonya Gorchakova, the first interplanetary romance—' "

"No, silly." She patted my shoulder. "To Mars. To this whole planet. It's a real world, not like the moon. Some day we could give it more air and water and millions of people could live here."

She must have noticed the skeptical way I looked out at the landscape, because she giggled and said, "All right, I forget. You test pilots have no soul. But I love you anyway. I sometimes wonder why."

I wasn't going to try to answer that, not with Colonel Harvey maybe listening in on our conversation. I just said, "You've got funny tastes in scenery."

"Remember, I am Russian. I like emptiness. Sometimes when I am up here and you are somewhere else I can imagine that I am here alone, with the whole planet to myself."

I grinned and shook my head. Then an old quote came back to me and I said, *"The grave's a fine and private place/But none I think do there embrace."*

"Quite right," said a voice in our earphones and we both jumped. "I think you two lovebirds had better haul ass back to the ship. We're cutting things pretty fine on the Oh-Two, so I want everybody back here before I even think of cutting out the primary LSS."

I sighed. "We're coming, boss."

Of course he was right. The ascent module of the *Grissom* had a secondary life-support system for use during the trip up to our orbital rendezvous with the transport ship, *Gagarin.* The primary LSS was in the descent module and would be disconnected and left on Mars, so that we wouldn't have the problem of hauling its considerable weight back up into orbit. However, the secondary LSS was a short-duration affair—if we didn't rendezvous and dock within thirty-six hours after cutting out the primary LSS, we'd be having a lot of trouble breathing.

IT HAD been five months from Earth out to Mars orbit. The

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landing ship, the *Grissom,* rode on a one-way robot propulsion module, while the *Gagarin,* the orbit-to-orbit ship that would take is all back home, slid along about a thousand meters away. Every three days two of us would EVA over from the *Gagarin* to the *Grissom* and supplement the telemetry readings by an eyeball check of major systems.

Sonya and I made the first check three days after Mars Orbit Injection burn, when we were already farther out than anybody had gone before. It got to Sonya—well, it got to me too, being out there, even though space itself doesn't look any different. It doesn't show any footprints or tracks even in close-Earth orbit, where we've been dumping garbage for thirty years. And out that far—well, I know I caught myself looking back over my shoulder suddenly, trying to surprise whatever or whoever was watching me. It might have got to be a bad problem for me without Sonya.

We could talk privately over our suit radios when we were out of line-of-sight from the *Gagarin* and we could always talk by touching helmets. And talk was all we could do. We were both single. We could (and by the time we were halfway to Mars we knew we would) get married when we got home and make up for lost time. But this pairing-off we were doing was exactly what the psych boys had worried about when they discussed a mixed crew for the expedition. If we had gone any farther than we did, either Novikov or Harvey or both might have felt they had to break us up. That might have led to the first space mutiny, but fortunately we never had to find out.

They let us talk, so we talked all across two hundred million kilometers of space. We traded bits of personal impressions, which were getting more personal as time went on, memories and, from the halfway point on, plans for our future. No politics. Either we didn't disagree, or neither of us cared enough about them to make a fight where we did. And of course there was the big point of the indoctrination they had hammered into all twelve of us: No Political Arguments. The joint expedition was a high-level experiment, so that bit at least made more sense than most of the rest of the indoctrination.

That was where matters stood with us when we slid into Mars orbit. We stayed up there for a month, photomapping, picking our landing spot and running all the tests in the Mission Profile and a few more we improvised on the spot. On Circum-Mars + 27 we started checking out the *Grissom.*

The *Grissom* had two parts, like to old Apollo LEM's—an ascent module and a descent module. But she was much bigger and fancier. She was a cone fifteen meters in diameter across the heat shield on the base and twenty-two meters tall. She weighed over a hundred tons ready for injec-

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tion into her landing orbit. Her powerplant was a lightweight Nimrod reactor heating Monopropellant B that gave her higher performance levels and a much bigger margin for error than the Apollonauts ever had.

The descent module carried most of the fuel, the heat shield, the four articulated landing legs, the primary LSS, the storage compartment and all the gear holding the two modules together. The ascent module carried the reactor and its supporting systems, the crew compartment, the computers and nav-com gear, the samples storage compartment, the secondary LSS and enough fuel to get the whole thing off Mars and into a rendezvous orbit with the *Gagarin*.

Between them the two modules were supposed to get five people down on Mars with two months' of supplies and the equipment for exploring out to about a fifty-kilometer radius from the landing site. This meant an electric tractor, two inflatable shelters with their own life-support systems, sounding rockets, explosive charges, drills, centrifuges, sterile sample boxes, thermal coveralls, clean socks, band-aids, and all the rest. When they had explored, the five would climb back into the ascent module and ascend.

The touchdown went off well. The big ring of solid-fuel rockets around the *Grissom's* base retro-fired for about eighty seconds, then separated and we slid into landing orbit. We got a little help from the Martian atmosphere on the way down (that's why the heat shield), then about fifty kilometers up we jettisoned the shield, cut in the main engine, and sailed along for another two hundred kilometers to a perfect four-point landing. We waited about ten minutes for the ground to cool off. Then we suited up, climbed down to the surface of Mars, planted the UN, US, USSR, British, Swedish, French, Japanese, National Geographic Society and Royal Interplanetary Society flags, unloaded the storage compartment, set up the shelters (one lab, one living quarters) and went to work.

What we found is in all the reports and isn't all that interesting anyway. Most of it simply confirms what our orbital observations and the Mariner and Voyager unmanned probes back in the 70's and 60's had already suggested. Mars is apparently lifeless, although our one trip wasn't enough to prove that. It is pretty short on air and water and there is much more seismic activity than on the moon. There is a little less impact cratering, but some of the craters are real monsters. Mars, after all, is closer to the asteroid belt.

The canals do exist, but beyond that we didn't do much to solve the mystery. Our tractor broke down before we could drive over to the nearest major canal system, so all we brought back was a lot of photographs from orbit. They look like pictures of parallel bands of fractures and faults. Obviously number-one priority for the next expedition had

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better be a canal survey and they'd better bring mountain-climbing gear for it. Some of those fractures are canyons two kilometers deep.

Not getting to the canals was frustrating, but in spite of that we picked up well over a ton of supplies, ran ourselves and our equipment ragged and were usually so busy we forgot we were engaged in a great heroic pioneering enterprise. That shouldn't be any surprise. If you let yourself do the kind of thinking about what you're doing that makes for good reading in the popular magazines, you have to be more concerned with your own thoughts than with the job at hand. And if you let yourself go that far in space very often, you don't live to write about it anywhere.

Sonya and I again managed to get teamed up fairly often, and we soon discovered that flat rock well up the crater wall that the gave the best view of any place within walking distance of the camp. Quite a lot of the planned work had to be scrubbed after the tractor gave out, so in these last three weeks we had plenty of chances to sit down by ourselves and talk for a few minutes.

We didn't talk about ourselves as much as before. I think we both felt we knew each other's minds well enough for the time being. We decided one personal matter—we would live in the U.S. But mostly we talked about developing a Martian colony, then maybe, if the planet could be terra-formed somehow—with enough time and energy, a Martian civilization. Eventually she had me believing it.

AFTER Colonel Harvey signed off we sat silent for a moment. Then we stood up, brushed the grit off our suits and headed downslope toward the path back to the *Grissom*. The marker poles with their reflectors were still sticking in the rock. We would leave them there and maybe some day somebody would have the time and shipping space to spare to go around and pick them up for museums.

We reached the camp and passed the deflated shelters. The dead tractor was out of sight behind a spur of rock. The instruments we were leaving behind had all been distributed to their various stations. A lot of discarded gear was lying around and the whole camp was a pretty depressing sight.

The *Grissom* stood about two hundred yards beyond the camp, squatting over the patch of cinders and glass her landing flare had made. They must have seen us coming, because they ran the little trolley down its tracks on the ship's side even before we reached the base and pressed the call button. Sonya went up first, so while I wasn't the first man on Mars (that was Harvey's privilege), I was the last one off it. Then the trolley came down again. I got on, and they winched me in. I climbed in through the hatch—it closed behind me and the compart-

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ment repressurized. I stripped off my suit and stuck it in the ejection compartment with all the other extra gear that would be dumped just before we lifted off. Two minutes later I was in the upper chamber of the crew cabin and slipping into my couch.

The three crew couches–Harvey's, mine, and Viktor Shrebnin's, the systems engineer's–were arranged in a half-circle on the upper level, with instrument and computer and radar consoles over and under and around them in the usual claustrophobic way. Down below, Sonya and Cesar Vaubois, the biochemist, shared the floor space with food, personal gear, sample lockers and the pressure hatch to the airlock level and spacesuit storage.

If they ever build a spaceship that doesn't require a thorough manual systems check before liftoff, I'll stand amazed and as far away from her as possible. I believe in computers, but I also believe in visual displays and the Mark I Model A eyeball. We used both aboard the *Grissom*. It took us over an hour before Harvey turned to me.

He said, "Hank, ring up the general and tell him we're about ready to take off our skirt."

I got on the radio and started calling, "*Gagarin, Grissom* calling," and I went on until Novikov came back with, "Roger, *Grissom*, we read you."

"All ascent module systems activated. Primary LSS disconnected. We are go for stage disconnect."

"Taking off our skirt," or "stage disconnect" (Novikov was a stickler for proper terminology) meant firing the explosive bolts and then triggering the spring-loaded latches that held the ascent module locked in its cradle inside the descent module. Our name for it came from the fact that the ascent module lifting off and climbing out of the cradle looked like a woman climbing out of a particularly broad, stiff skirt.

I punched the arming button on the explosive bolts, waited thirty seconds after the light flashed red, then punched the firing button. Eight sets of bolts fired with a rolling *whant* and the ship quivered slightly.

I looked up at the status lights for the eight latches. Four at the base of the cradle, four up around the neck at the top of the descent module's cone. All eight lights showed green for "latches engaged." There was a single switch for unlocking all eight. I pulled open its cover plate and flicked it across.

Clang, clunk, clung, *shunk!* It sounded beautiful. I looked up at the status lights. Seven had gone red, seven latches had disengaged. Number eight was still green. I frowned. Harvey looked at me, looked at the status lights and said disgustedly, "Shit."

Silence. I flicked the switch gently two or three more times. The light stayed green. Viktor let out a long breath.

Novikov's voice came through the

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hiss and crackle on the radio. *"Gagarin* to *Grissom.* Are you having a difficulty?"

Harvey replied:

"Grissom here. Status lights indicate number three upper latch did not disconnect on upper three latch. We are canceling initiation of the countdown until we find out what's wrong."

Throat-clearing noises on the circuit, then: "Very good, *Grissom.* LOS on this pass in about five minutes. We will check back with you when we reacquire. Good luck."

"Thanks," said Harvey. Then, more to himself: "We may need it."

WE SETTLED down to finding out what was wrong. First, was the latch still in place? We knew that status lights had given wrong readings too many times for us to rule out the possibility that the latch had tripped just as it was supposed to and we were sitting and staring at a defective light. It would be pretty damned embarrassing if we went and did something drastic while the latch was all the time snugly retracted.

But if it wasn't retracted, we *were* going to have to do something drastic. We couldn't lift off with the four tons of the empty descent module still fastened to our tail and have any hope of reaching orbit. If it didn't hold on, it might break loose somewhere along the trajectory and tumble us out of control. We might wind up crashing back to Mars at full speed or charging wildly off into space, so that if by some chance we did reach orbit we could never rendezvous with the *Gagarin* before our oxygen ran out. Except that we were going to be out of oxygen anyway within thirty-six hours whether we tried to lift off or just sat on Mars contemplating our inputs and outputs.

Since all the things we might have to do were not only drastic but dangerous, the first thing we did was to pull off the status-light panel and check the accessible parts of the circuitry for malfunction. That was ticklish enough and doing it carefully enough to avoid *causing* damage took us nearly two hours. Halfway through our work Novikov came back on the radio. He got a progress report, then wisely shut up and let us work.

By the time he came around again we could tell him that if there were any circuit defect it wasn't anywhere we could get at it. Therefore we would have to assume the latch was still engaged. Novikov didn't like that at all.

"Possibility," he said. "Could you test for engagement by blasting with the main engines and watching the stress gauges?"

"If we did it very carefully, yes," said Harvey. "But it would cut into our fuel reserves. Can the *Gargarin* maneuver to compensate if we take a piece out of our rendezvous capability?"

A moment of silence, with voices off.

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Then: "Yes. We are at one hundred and twelve percent of our fuel reserves for docking and rendezvous maneuver. We can fill in for you."

"All right. We'll blast at the absolute minimum thrust needed to register engagement. We can't risk distorting the latch if it's still engaged." Viktor nodded enthusiastically at that.

So Novikov signed off again and we sat down to arrange things. Just in case the latch had tripped and we started climbing freely as thrust built up, we decided to wait until the next window for a reasonably fast—six hours or less—rendezvous with the *Gagarin.* That meant about a forty-minute wait, so I unstrapped and climbed down into the lower level to talk to Sonya and Cesar Vaubois.

Passengers in a spaceship have one advantage. The ship is so small and they are so thoroughly briefed on its workings that they usually have a fairly clear idea of the situation when something goes wrong. They don't have to sit in their cabins or their seats and bite their nails while somewhere off in the dim dark distance the captain or the pilot is sitting and biting *his* nails while the instruments tell him the sad story. So the two scientists were in no worse spirits than the three of us upstairs.

Vaubois grinned at me as I came down. "It is at hard times like these," he said, "I could wish myself back in the days of Pasteur. A chemist could then make his discoveries sitting comfortably in his laboratory, not on some unbelievable planet in the middle of too-complicated machinery."

Sonya spread her hands in despair. "This hairy Luddite—he is always complaining about the machinery, the machinery. What would Pasteur have given for a chance to be here?" Vaubois shrugged and grinned again. There was nothing wrong with morale downstairs, so I climbed back up and sat down to wait for blast time.

Harvey did the whole thing manually, starting the thrust at four per cent and slowly pushing it up to seven, ten, twelve, fourteen, eighteen—

—and the strain gauges lit up, bright red faces showing quivering needles slowly swinging up across the dials, and a warning horn blatted in our ears. Harvey's big black hand clutched the throttle as if he wanted to tear it out by the roots and banged it hard down against the stops. There were clanks and clunks and pinging noises as we settled back into the cradle and loud curses in English, French, Russian, and Armenian.

NOVIKOV was even unhappier than before when the *Gagarin* radioed us and we were still stuck. There wasn't much he could do. however, except have a running rendezvous set up on the main computer, so they could blast to meet us any time we sprang ourselves loose. Also, wish us good luck, again, which was nice of him.

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We knew we were going to have to either trip the latch or cut it or break it somehow. Blasting with the main engines at a higher thrust level wasn't the way to do it—too much fuel expenditure, too much risk of distorting the latch, even the risk of ripping open the hull of the ascent module. It looked as though somebody was going to have to climb into the upper equipment bay of the descent module, get at the latch mechanism and cut it or hit it or something until it came free. And that somebody was now going to have to do it soon enough for us to rendezvous and dock with the *Gagarin* in thirty-one hours.

So we got out the drawings and started looking at our problem area. The hardware for the upper ring of latches was in the upper equipment bay of the descent module, along with lots of other miscellaneous machinery. The engineers had used it as a sort of dumping ground for everything they couldn't fasten on or plug in somewhere else. The bay itself ran around the top of the descent module and was roughly the shape of a French-fried onion ring. There was one access hatch in the outer hull, so we didn't see any big problem getting into the bay.

Moving around inside it to the defective latch (on the opposite side of the ship from the hatch) was going to be another matter. To save space and weight, the designers had arranged things so that the retracted latches simply snapped back into what little open space there was in the bay. The inside of that bay was a mess anyway, but with those retracted latches squatting in the path of whoever went inside to work on the jammed one, it was going to be next thing to impossible to move around in it.

Viktor, as an engineer, was pretty angry over this lapse from "belt and suspenders" by his colleagues. But they were all back on Earth. He went on being angry in several languages for several minutes, then picked up the drawings and went down into the lower level, spread them out on one of the couches and began doing things with calipers and a slide rule over them.

His tone was still angry when he climbed back up, followed by Sonya and Vaubois. He was also worried and that showed up in both his face and his voice.

"I have reached a conclusion." He looked ominously at the rest of us.

"Can the melodrama, Viktor," snapped the colonel.

"All right. Someone can climb into the bay and release our troublesome latch. But that bay is very tight quarters, with bends around equipment, sharp edges and little space. So the person climbing in there must be very small." In spite of what Harvey had just said about melodrama Viktor paused for a few seconds. Maybe it was just to catch his breath, maybe to listen for the wheels turning.

They were certainly turning in my head. Sonya was—by a good fifteen centimeters—the shortest of us all

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and slender besides. After the moment it took me to remember this I slowly turned around and looked at her. So did everybody else.

Viktor waited until everybody was staring at her and then, just as she was opening her mouth to speak, he went on: "Yes. Also, she cannot wear her life-support pack."

This time he got his effect right away. Everybody said "What?" or something like that, except for Sonya, who just looked at him. He ploughed on.

"Yes. If you will see here—" we bent over the drawings—"there are two sharp bends here and here, around the emergency transponder power pack and the number-two sensor housing, where even Sonya would not be able to wriggle through if she were wearing the backpack. It would catch somewhere and she might be trapped. She might possibly be able to make it, but she cannot really do much wriggling in there if she does not wish to rip her suit." That was a hard point to argue.

All this put the ball in my court. I was the crew's EVA equipment specialist. I sat there for a bit, making up a mental list of the things I needed to check, then started checking them.

EVA consumables at fourteen man-hours—we had plenty, since Sonya's consumption was less than the mean figure. All five EVA suits were in the ejection compartment—but they could easily be pulled out, checked over and brought back on line. This would take more time than we really wanted to spend, but not dangerously much. Even recharging the backpacks was only going to add an extra half hour.

Hoses. There were the headaches. The way Viktor described the arrangement we would have to use, Sonya would be like an old-fashioned helmet diver. She would be inside the bay, her backpack with its oxygen supply would be out by the access hatch and connecting her with it would be two five-meter hoses.

That length was the big part of the problem. It was barely enough to allow her to get in there and have some slack for working, but it was every bit of the flexible metal hose we had. And to get that much we would have to fasten all the 60-millimeter lengths together with airtight seals and that would take more time. We could have solved the length problem by using the rubber laboratory tubing, but it was too small and too likely to get brittle and then rupture. The temperature out there after sunset would be down to around minus eighty Celsius, which does funny things to rubber.

I outlined all this and nobody said anything, until Harvey looked at the clock and said, "We'll be coming up on the eighteen-hour mark by the time we've got the suits ready." The eighteen-hour limit for continuous work dates back to the Apollo lunar flights and it's not a bad idea—you get tired and you start doing things you can't afford. Except that right

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now we couldn't really afford to put off the critical EVA for another sleep cycle. That would bring us down to about twenty-two hours of oxygen, which might not be enough if anything more went wrong.

But if Sonya went out there are started working in that cramped equipment bay when she was tired, she might slip and then something would go wrong. Unless she thought she could sleep by herself while the other four of us banged around both compartments rigging the suits and the hoses.

Harvey put the question to her.

She nodded slowly and said, "I think–if I lie down and rest for the hours while you are working on the suits I will be ready for the work even if I do not sleep."

"Would you like a pill?"

"The rules."

"Screw the rules."

She held up a hand. "No. For me, the pills make me sleepy for hours after I wake up. I will work better tired."

Harvey nodded sharply. "All right. Go park yourself in one of the control couches. Hank, pressurize the ejection compartment and let's get to work on those suits."

The suits turned out to be an easy job and even the long hoses weren't difficult–just time-consuming. If we hadn't been working with one eye on the clock we'd have been in good shape.

We gasketed the hoses with putty, then wrapped the gaskets several layers thick in epoxy tape. This didn't improve their flexibility, but they didn't have much to begin with. When we shot pressure through the hoses to test the new seals, there was still a very slight leakage at each joint, but not a critical one. In fact, the new seals tested out stronger than the built-in ones on the helmet and backpack.

It was nagging, finicky work, and we were all feeling tired and cranky when we finished. Viktor took photos of the whole arrangement, while Harvey sat and muttered, "Stupidest damn do-it-yourself project I ever saw." Then he and Viktor climbed down to brief Sonya while I sat down and ran another set of tests on the hose connections. They didn't really need it. I think I was doing it mostly to put off the moment when Sonya would have to go out there and take her chances on our cobbled-together arrangements. I suppose Harvey noticed this, but he didn't say anything about it. I thanked him for that later. He didn't say anything about my volunteering to go out with Sonya, either–maybe he thought the EVA expert was the logical man anyway. I suppose I ought to thank him for that, too.

WHEN SONYA and I finally climbed out of the airlock the sun was almost down. There isn't enough air on Mars to give much sunset effect unless the sun happens to set through a duststorm. We saw that a couple of times and it makes

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an absolutely beautiful blood-orange glow on the horizon. Without the dust the sun just drops until it reaches the horizon line. And then there's a little gold patch on the horizon line for a couple of minutes while the sky purples and soon turns black very fast. Then the patch fades, the stars all come out, and it starts getting cold. And meanwhile thermals run past at maybe twenty meters per second, increasing the heat loss of anybody working outside. That was why Sonya went out there with two pairs of thermal coveralls over her basic pressure suit. It made her bulkier, but still nothing like the old-style suits. We wouldn't have had a hope in hell of getting anybody wearing one of those into the bay.

Harvey turned on the external lights. We tied our safety lines on to the first attachment point outside the hatch. I got a good grip on the line and started my slow walk around the upper part of the cone to a point just below the access hatch to the equipment bay. It was like walking across the face of a glacier and that wind didn't make it any easier. If I slipped, I might knock Sonya off. I certainly would break my helmet or my hose connections or something important when I hit the ground twenty meters below.

I reached the hatch. Then, while Sonya made her trip, I kept one eye on her and the other on the hatch as I reached up and tripped the external latch. It opened, but the external lights didn't show much inside. I transferred my lines and, when Sonya reached me, pulled the flashlight off my belt and shone it inside the bay.

It looked just as bad now as it had on the drawings. Sonya slid as close to me as the space would allow and stuck her head in. I saw her lips move as she recited to herself the sequence of components she would have to crawl around. Then she braced herself against the open hatch cover, one leg hooked over the rim of the opening, and began unbuckling her life-support backpack.

When she had finished, she crouched in the opening while I carefully picked up the pack and tied it firmly to the hatch mechanisms. While I was doing this Sonya was checking the tools on her belt. We didn't know exactly what was causing the jam, so we had hooked everything we thought she might possibly need on the belt, including one of the laser torches with enough power to cut right through the latch if necessary. With everything that was hanging from it the belt weighed nearly half as much as she did.

I was getting edgier by the minute as she checked each tool. I wasn't going to blame her—but was she getting cold feet? Maybe literally, since it must have been passing sixty below already? Finally she turned and nodded to me. I cut off my suit radio and leaned over to touch helmets with her, in case she had anything private she wanted to say to

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me. But the expression on her face was all business. I don't think she even noticed I had switched off the radio.

She just said, "Watch the hose for me," kneeled, flicked on her own flashlight, and crawled forward into the bay.

I watched her disappear bit by bit—head, shoulders, torso, hips, legs—until she was entirely out of sight. Then there was only the vibration coming faintly through the metal of the ship, the jerking of the hose and the sudden darknesses and sudden glares of light as her flashlight shone down behind equipment or up against the low roof of the bay. I stuck my head in as far as I could without losing my grip on the outside handholds and tried to follow her course as well as I could.

She went in about three meters, as far as I could tell from the length of hose left, then stopped. Both the hose and the light stayed steady for a couple of minutes and I couldn't feel any more vibration. I could hear her breathing getting heavier and once or twice something like half-audible Russian curses. Finally came a moment of total silence—then, just before I started getting really frightened, she said quietly, "I'm coming out." I reached down and began taking in the slack on the hoses as they began jerking and twisting again.

Sonya backed out of the bay, reappearing the same gradual way she had disappeared. When she was completely out in the open I took a good look at her. The thermal coveralls were ripped in a couple of places and I fingered the tears lightly to make sure they didn't cut into the basic suit underneath.

She pushed my hand back gently and said, "Bad news, everybody. I can get through, all right, but these coveralls—they keep bunching up at the waist and catching. I think I must try taking them off."

Harvey came in with: "Are you sure you won't get too cold?"

"I don't think so." Through her helmet faceplate I could see her drawing her lower lip back from her teeth, her normal gesture when she was getting impatient.

Before I could say anything Harvey went on: "All right. Go ahead. But if you start getting cold—"

Sonya was already unbuckling her tool belt. I took it from her, laid it down on the deck and braced myself against my lines and the hatch cover to help her off with the coveralls. With both of us working on them they came off quickly. I rolled them up carefully and stowed them in a corner of the hatchway.

With those shapeless coveralls off, Sonya had enough figure to show through the suit. I didn't try to keep from looking at her. What bothered me was how everything was so clearly visible, as if I had a couple of extra senses. It bothered me particularly because this was how I sometimes started feeling just before an attack of vertigo and I couldn't afford

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vertigo perched up out here in the cold and the wind, twenty meters up and Sonya needing my help.

I finally looked at her so long and hard, trying to clear my head, that she noticed it. She didn't mind being looked at most of the time, but I was afraid she might be bothered by my doing it now. Instead, she looked right back at me—the same kind of look I was giving her—reached out and squeezed my shoulders. Then she buckled the tool belt back on and began her crawl back into the bay.

This time the hose kept moving. I finally saw the light stay steady and heard her say, "I am there. The latch is still in place. I am going to try the hammer first." I heard her breathing as she twisted around to pull the hammer out of her belt, then I felt a faint shiver through the ship's hull as she began tapping on the latch.

It went on for five minutes as she pounded away, harder and harder.

Then: "Nothing is happening. I am going to try the laser cutter."

There was a throat-clearing noise on the circuit from Viktor. "Sonya, I think it might go faster if you got at the retraction mechanism itself. Can you get at the access plate from where you are?"

There was a little bit of silence, with a background of faster breathing. Then came scraping and clunking noises as Sonya shifted her position.

"Yes." Two sharp bumps. "I have released the fasteners. I am taking off the plate now."

"Be careful. If one of the bolts hasn't fired, a sharp jar might set it off." If one of the bolts hadn't fired, the explosive might have become unstable through months of low temperatures with the heat generated by landing creating a problem on top of that.

Sonya was careful enough. I didn't hear a thing for nearly a minute.

Then there was a little click and: "Hatch is off. Both bolts fired but the spring didn't operate. I am going to examine the spring housing."

I wasn't keeping track of time so well now. I was getting nervous and I was beginning to get uncomfortably cold, although the wind was dropping. I reminded myself that Sonya must be getting cold even faster and listened.

Finally I heard her say: "I cannot see all the way into the housing. But I think the spring has fractured. Yes, this end is loose and there are little shards of metal lying around."

"I'll be damned," came through from Harvey.

"Sonya, is the laser torch working?"

"Yes."

"Put it on a medium setting and cut along a line about eight centimeters below the base of the latch."

"The latch?"

"Yes. Once you cut through the plating there, you can stick some sort of a lever through it and pry the latch free. Be careful—don't heat up or damage the retaining bar of the latch—or we'll never get it free!"

"Why not have her put the laser

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directly on the latch and slice it in two?"

"It might fracture if we heat it up. Or we might fuse a piece from the spring. Either way it might end up jammed for good. It's too risky."

"All right, Viktor."

The silence went on and on this time—until both Harvey and I got on the circuit with a "Sonya, are you all right?"

For the first time there was a real note of strain in her voice. "Yes. Now stop bothering me." Harvey reacted before I did, using the senior-officer voice he only used when he wanted to shock something out of one of us.

"Miss Gorchakova, report your condition!"

She was silent for a few seconds, then said quietly, "My feet are getting cold. I am having a little trouble getting into position."

"Sonya, I think you'd better try putting the torch directly on the latch. Shut up, Viktor!" Harvey's mind must have been working along the same lines as mine. If she lost the use of her feet, it might be impossible for her to crawl back out again.

"Colonel Harvey." She took a deep breath. "Viktor is the engineer. And I am in here. You are not. Let me work."

She shut off her radio with a sharp click. Harvey swore a bit, then shut up. I was too edgy to say anything. I hunched down, ready to move if Sonya called, and waited. I was imagining her in there, struggling with tools she had trouble lifting on Earth, while her body heat flowed rapidly out through the suit into the minus-eighty temperature now surrounding her. At least she was out of what was left of the wind.

After about two minutes we heard a clanking noise as she picked up something, and then a series of smaller clanks, clicks, thumps and bangs that went on and on and seemed to be ready to go on for three hours. But it was really only about four minutes later when there was a single sharp *thunk!* that jolted the whole ship.

She came back on the circuit with: "Latch cleared."

As if we needed telling. It sounded like more than three people cheering from inside. When the noise died down, Harvey said: "Okay, Sonya, Hank. Get your asses inside and we'll call up Novokov as soon as we have AOS and tell him we're ready to initiate countdown. And Sonya—thanks."

"Nichevo," she replied. Maybe it really was nothing to her. "My legs are a little—stiff. I will have to come out slowly, using my hands." I shifted position to stretch out my arms as far as the space would let me towards where she would crawl out of the bay. I saw her light begin to jerk and waver again as she reversed her position and the hose started twisting.

She was having a bad time of it. I could feel the vibration as she dragged herself around equipment, the lower part of her body a useless

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weight thumping down hard on each move. But it was her breathing that really scared me. It was rasping and half-choked. She sounded on the edge of collapse.

Suddenly I saw her helmet silhouetted against the light reflected from the ceiling. I wriggled forward and stretched out my arms until I thought they would pop out of their sockets. Sonya saw me moving and raised her head.

"Hello, Hank."

I giggled softly with relief. Her voice had sounded quite normal. Then I noticed that her hose had become looped around a telemetry housing, just a few inches below the top. I mentioned it to her and saw her nod. She pulled herself around and reached out toward it, her back arched and her arms at full stretch.

As she reached out she half-rose off one knee. The numb lower leg buckled. Overbalancing, she toppled forwards. Her head struck the hull with a jar I felt clearly and for a split second all her weight came down on the hoses. The helmet seals had become brittle in the cold, like the spring. They gave.

I saw the white cloud as the air puffed out of her helmet and yelled something incoherent. Sonya tried to clasp her hands over the open hole, but the air was gone before she could do it. I heard her gasp. Then she twisted at the waist and fell over on her back. Her head smashed down on the deck and I saw the faceplate seals of her helmet crack. I jammed myself as far toward her as I could. It wasn't far enough. Not too much farther and *possibly* I might have grabbed her and *possibly* rigged some sort of cross-connection between our helmets. Two "possibles," neither of them a "probable." And in any case I couldn't reach her. I didn't look at her face, either—at least not until quite a while after she had stopped moving.

I stayed fairly calm for the ten minutes it took for me to do what I wanted to do and climb back through the airlock. I didn't get the shakes until I was back in the crew compartment . . .

. . . and I didn't get over them until we had broken out of Mars orbit and started home. Harvey took the *Grissom* up by himself and made rendezvous only three and a half hours after liftoff. Dr. Petrova sent me to my cabin and it wasn't until we were two hundred thousand kilometers out that they sat me down and asked for the story. Harvey argued Novikov out of doing it sooner.

I know they couldn't understand why I did what I did before coming inside. After Sonya stopped moving, I waited for about three minutes, then picked her up and propped her in a sitting position, looking out through the hatch. It seemed the way she ought to be, because until the next expedition she does have Mars all to herself. Her fine and private planet. ★

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Poor Sam—he faced the oldest weapon of all!

A BETTER RAT-TRAP

CHARLES HOEQUIST and ROBERT PHILLIPS

SAM 47 crouched low, trying to blend his shape into the dune curves.

In the faraway control blockhouse Sam's operator looked at the monitor screen showing the image relayed by the camera in Sam's left eye-socket. She swore softly.

The cat drifted over the dunes, shoulders working smoothly under orange-and-white fur. Well-trained, alert and deadly, it was a species-specific weapon. Sam was the target.

Sam remained unmoving, awaiting orders to move. The controller sat very still, perhaps trying to augment Sam's frozen stance.

Then the cat stopped and both Sam and the controller knew that Sam had been spotted.

The controller was good at her task, but there were many good controllers. She was a better controller because she knew when to let the weapon act on its own. This was a typical occasion.

Slowly the cat turned, crouched, tail whipping the salt air.

The controller shut down the command frequencies, leaving only the monitoring amplifying system in contact.

The cat aligned himself to face

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Sam—a sleek tom bred and trained all his life for this eventuality. As much as instinct and training could induce him to, he hated Sam. He existed primarily to kill any rat he found. No ordinary rat had a chance against him.

Sam was not an ordinary rat, though. Sam 47 was an incredibly complex animal-machine gestalt. His skeleton had been strengthened with aluminum; he was controlled by millions of microelectrodes; his every bodily function was monitored, as was every current in his brain. In addition the computer took every muscle impulse from the brain and amplified it, splitting it into identical pulse-orders, one going to the muscles and the other going to the microcables that multiplied Sam's strength and agility several times over. Sam's stomach had just a few hours earlier been replaced by two things: a protein sac to keep Sam alive long enough to fulfill his mission, and a tiny powerful bomb.

The cat leaped at Sam, hot instinctive hunting desire augmented by artificially induced killer lust. But quick as the cat was, Sam was infinitely quicker.

Sam jerked up to his full nine-inch height, surveyed the oncoming death for an instant, then sprang sideways to safety, slashing at the murderous feline at the same time. Aluminum claws dug thin, shallow slits into the cat's side. The precise arc of the feline body disappeared as the startled cat flailed into the sand with a scream of surprise and rage—no intended victim had ever reacted as had Sam.

Before the cat had any chance to reorient himself Sam was streaking the offensive. With his capabilities, he could have met the enemy head-on and won; but every scratch received, no matter how small, was a drain on energy and efficiency. It was better to use finesse. At this point, the controller could only hope that Sam's injury-aversive conditioning would hold.

SAM rifled directly at the feline. At an instant that seemed much too late to avoid raking claws he swerved, zigzagging out to the cat's side in a spray of sand—then in under the white-furred belly. Sam's opponent had good reflexes, excellent reflexes, but against the equipment that, through radio communications, formed a vital part of Sam's voluntary muscular control any other set of reactions in the animal kingdom were pitifully slow and inadequate. The cat was only just realizing that this strange new rat had changed direction when Sam unleashed a burst of aluminum fury of one hind leg, then scurried out of range of the frantically thrashing cat. When he had gone several meters, Sam whirled about to face an enemy that now regarded him from a shaky three-legged stance.

At this point, the cat was, in his own fuzzy cat-way, frightened and

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confused. He was confused because of the strange little hated target that was everywhere at once. He was frightened because he had been hurt. Badly hurt. More than ever he wanted to rip Sam apart. He also realized that the feat was not within his abilities. So, planning in an indistinct way to catch Sam off-guard later, he started slowly, cautiously, to move away. It was a serious error.

The instant Sam sensed his foe's attempt to break off, the betrayal of weakness, he moved in. The cat barely had time to recognize the fact of Sam's renewed attack before Sam changed tactics.

Sam jumped. A short, high arc, giving the cat ample time to look up and try to rise on both hind legs to fight. The damaged leg gave way immediately, dropping the cat on the sand, belly-up.

Sam's controller realized what Sam was doing—it took a conscious effort on her part to keep from forcing Sam to break off the fight. She had allowed Sam free rein and he was undoubtedly going to sustain some injuries in this close combat. If she tried to pull him away now—against his powerful fighting instinct, the conflict would probably only confuse Sam, jumble his coordination and give his enemy the upper hand.

Sam had lost all contact with reality—his universe was centered on a point precisely under his claws and he raked at that point, tore at it, ripped it with aluminum fangs, mangled fur and flesh, ignoring other claws that scored his back.

But the controller couldn't ignore those claws. The monitors indicated a certain loss of efficiency due to wounds already received—the damage was not yet critical, but that was no reason to take chances.

The controller waited a fraction of a second, making sure that the cat was too panicked and weakened to counterattack when Sam broke off. Then she resumed command of the frenzied rat.

Sam jerked up, then sprang away from his victim, contorting wildly, trying to get at the pain racing along his back and sides as the amplifying systems forced awareness of pain into his brain.

Nervously the controller studied the systems indicators; Sam's blind rage was breaking up, slowly fading away from the cat and recentering on the heightened pain sense. She shifted temporary command to the computer—it had been programed for this contingency. With a thorough knowledge of Sam's reactions and psychology, it progressively de-amplified the pain signals, and then began to blank them out of Sam's brain, calming him down. The end result was a placid Sam, unaware of his injuries, squatting on the sand and watching the cat feebly try to paw its entrails back into a mangled abdominal cavity.

The controller stared at the screen for several seconds. She owned a cat of her own . . .

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STERNLY she broke off the computer command circuit and resumed personal control. Sam began trotting across the sand, swinging his head slowly from side to side to relay a better view of the terrain.

The controller was monitoring Sam with an intensity reserved only for this stage of the mission—she controlled Sam's behavior with fantastic precision for the same reason. Now Sam was entering a zone in which the danger was not from other animals—they were something Sam could deal with—but from a thick blanket of electronic detect-and-destroy devices, set up by the Americans when they realized the danger from Sam's predecessors.

Suddenly a thought struck the controller and she queried the computer: what was Sam's present operating efficiency and projected index at the point of the mission's final state—assuming no further interruptions?

The computer mulled over the question and answered it in less than measurable time: present efficiency overall, 79% of highest possible physical capabilities, assuming all factors totally favorable at time of standard measurement; projected efficiency overall at final stage, 70% of etc. The controller glanced at the tape, tossed it aside and forgot about it. Better not to worry about something that was not critical—there were plenty of problems that might become so.

A dog patrolling the dunes came upon the cat's body. Carefully, he clamped it in his jaws and carried it to his master's lookout post.

Sam and the controller now worked virtually as a single entity—the controller's mind in Sam's body. A faint smile of relief played over her features as she guided Sam through mine fields, low-profile scanning units, sound analyzers—so far, the data gathered by the previous animals in the Sam series seemed to be adequate. Apparently the Americans had nothing new.

The controller had to curb her impatience as Sam progressed—it was a great temptation to abandon caution, to send Sam racing through the Americans' defenses. It irked her slightly that she could not yet see Sam's objective, due to the limited focusing ability of the microlens in Sam's eyesocket. With every step Sam took she relaxed a bit. Sam was sure to succeed—he couldn't fail this far into the mission.

Sam suddenly began to limp—a leg damaged in the fight was beginning to give under the demands put on it. The controller lowered the pain-inhibition in Sam's brain, causing him to favor the leg, saving it from further injury. The controller checked with the computer again on Sam's efficiency: present, 77%; projected at final state, still 70%.

At Security headquarters, the cat's corpse was studied closely. Grim officers checked the electronic killers, rechecked, checked their monitors. By simply refusing to be

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found, Sam was unconsciously waging a war of nerves on the Americans.

Occasionally Sam would lift his eyes. The lens in his left socket would slowly screw out, as the controller again tried to see the purpose for Sam's existence. It was still too far away. Sam lowered his head again and continued across the dunes.

Security jeeps sprinted across the concrete plain, erupting out of their low blockhouses—in each the passenger was holding tightly to a weapon. The weapon stank.

Sam peered at the far horizon once again. The controller looked at the screen and a sunrise of contentment rose into her face.

There it was. The rocket.

As yet, the camera could just barely focus on it—it was a thin finger, pointing up from the bottom of the meter-wide screen. But it was there. Destroy it and the Americans would be set back crucial weeks. Sam could do it and by doing so prove the value of the project that had spawned him.

Sam's controller increased his pace slightly; he looked ahead more frequently now, and the rocket's image grew from a finger's height on the monitor to twice that, and twice that.

Slowly, in careful stages, the controller began to relax. Soon it would be over. Once she finished maneuvering Sam out of the danger zone, his training could take over. The operation was to be successful, then—well and good. She had known it would be. She knew Sam, knew his capacities. Certainly he could be hindered—after all, he was only a rat—but stopped?

No.

Sam stopped.

TO THE controller the halt came almost as a physical jolt. Sam simply froze, without any orders. Slowly she ran checks over all of Sam's sensory monitors, concentrating hard to fight back an odd feeling of disorientation in her mind, which she recognized as a prelude to panic.

Sight: nothing dangerous. Smell: again a negative. Tactile . . .

A wire. Sam could feel it, a sharply delineated pressure on his chest. Then came the sound.

Now hyperalert, the controller seized on the auditory response instantly and investigated it. Obviously it was nothing deadly or Sam would have acted on his own—but then, did Sam know every noise that could mean danger?

Sam angled his head left, to look at whatever made the hissings, the scrapings. Dogs? Cats? Men?

Sam looked with one eye and the controller looked with the other. Guns looked back at them, muzzles instead of eyes, looking at Sam.

For an instant the controller stared at the screen, puzzled. Then Sam's predicament crashed into her awareness. Her flash of insight was followed immediately by a rush of

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panic. Sam couldn't be stopped now! Her life was dependent on his at this point—Sam's death prior to mission fulfillment would seal her own fate. Sam *must* survive, must escape, must complete his assignment.

She felt linked to Sam as never before. Slowly her panic drained away—but it left a stain of desperation on her thoughts, slowing down her mind, clogging up idea channels.

For years the controller had successfully practiced rigid emotional control—she had, in fact, succeeded so well that a part of her was totally amazed when she began crying.

The jeeps had dispersed around the rocket, Sam's target. Each jeep's passenger took the weapon he held and placed it on the concrete. All the jeeps departed, leaving the stinking weapons around the rocket.

Trapped, the controller's mind ran in tight circles, over and over, mechanically, reviewing again and again what she had realized in that cruel burst of insight.

The Americans had been clever. Considering the pitifully small amount of data they had on the Sam animals, to have stopped Sam 47 was a fantastic achievement. And Sam was very thoroughly halted. When his body had pressed against the trip wire, weaponry had been alerted to Sam's location. A normal animal would have stepped over the wire, releasing the pressure—and quite probably activating the guns. Sam, of course, stopped, held prisoner, to be found, perhaps even captured.

From habit, the controller checked Sam's operating capacity again: present, 76%; projected, 68%. Unless she accomplished something soon, it would be too late.

The Americans' electronic devices noted that something had been activating a section of wire entirely too long. It passed the information on to its masters.

WITH agonizing slowness Sam's controller forced herself to think. The problem was quite well defined and she held as axiomatic that the existence of a problem proved the existence of the problem's solution—it was just a matter of finding that solution. Grimly the controller began the search.

First, directly ahead were only sand, grass, concrete and the rocket.

Next, to the right lay sand, scrub, asphalt, the Americans' anti-Sam net.

To the left—more of the same.

Carefully, keeping pressure on the wire, Sam turned to look back: again, the same. But something was nagging at the controller. There had to be an answer somewhere in all this. She began studying every piece of defensive armament on the monitor screen.

The soldiers, with their dogs, were starting their search along the wire, but there was a lot of wire and only only one Sam.

Cautiously the controller began tracing patterns from her observations, searching alertly for something to aid Sam. Then, building up in her

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consciousness, came the data she needed: the guns.

After looking at as many as she could see, the controller reached the firm conclusion that only those within a definite radius of Sam had moved to sight on the rodent. In addition, the guns were not all aimed precisely at Sam—as far as she could tell, the intention was to saturate a certain area. And if there were boundaries to such areas, then it followed that there had to be a differentiation between sections of wire.

With new purpose, the controller directed Sam to begin looking to each side again. The controller studied the monitor intensely, and soon found what she sought: to Sam's left, a black post approximately a meter tall served no obvious function except to hold up the wire, which probably ran directly into the post, though the wire was too thin and the camera's resolution inadequate to tell.

This, then, might be the solution. Assuming that the post indeed controlled the actions of the guns, it would be by direct connection—the guns weren't equipped for radio reception by the looks of them. Assume next that the control cables were close to the surface, where Sam could get at them without leaving the wire. And finally—and here was the weakest link—assume that Sam had cut off a flow of current and that a resumption of that current would fire the guns. This last point was pure conjecture.

Leaning against the wire, Sam made his way to the black post and began digging around the base. For a minute, sand spewed in a gritty cloud from his claws. Suddenly he stopped. His head twitched up, giving the controller a view of whatever it was that Sam had heard. She gave a moment to fuming about bioengineers who couldn't fit both a camera and a mike into Sam, leaving her with only the means of knowing that Sam had heard something, with no way of finding out what it was, short of seeing it.

Sam saw it. From the bad picture on the monitor the controller judged the moving figures, man and dog, to be at least four hundred meters away. Then Sam went back to his digging, more hurriedly now and without spraying so much sand—the controller kept him working when his instinct told him to flee.

ANOTHER minute of digging and the controller began to worry about her hypothesis. She directed Sam to dig in one spot only, hoping that the Americans had run a line to the guns over the shortest distance possible. Now, more and more, she was operating on guesswork. She didn't know how fast the soldier and the patrol dog were coming—or even if they were continuing in Sam's direction. There was little logical reason to believe that the control cable would be buried within Sam's reach. Her worst uncertainty was:

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were the guns signaled by a current or no-current?

Hearing what the controller diagnosed as barking, Sam snapped up his furry head to look again at the soldier and the dog. The controller turned Sam's attention back to his digging. She could see that the pair had closed to three hundred meters, perhaps a bit less—time became a vital factor at this point.

Automatically the controller checked Sam's index: present, 70%; projected, 61%. She was mulling over these low figures when Sam found the cable.

His claws had raked across the sheathing and Sam stopped, his objective discovered. But the discovery brought with it a tricky problem: the sheathing remained unmarked—obviously Sam couldn't snap the cable with his claws and it was too far away to reach with his teeth.

The controller was not about to be stopped. She and Sam were, for all purposes, one entity again, as the controller lifted Sam's left hind leg to shove against the wire while Sam inched a bit farther forward—forward—forward . . .

Sam's nose reached the cable, advanced farther, to bring the jaws to bear. Sam's auditory monitor picked up sharp impulses—barking again. The controller forced herself not to think of the consequences of chance going against her.

Sam's incisors bit into the cable, nibbled, gnawed—and snapped the cable.

No reaction. Sam wasn't ripped apart by high-velocity bullets. The gamble had succeeded.

Sam shot over the wire at full speed, racing toward the rocket, victorious. He was but three hundred meters from his target, oblivious to everything but the rocket, his objective. Outside Sam's universe the guard dog went wild on his leash and was released to streak across the concrete after Sam, but it was hopeless. Even with an injured leg Sam was faster.

Tension and fear ebbed away from the controller as Sam approached to within two hundred meters of the rocket. There was no way to hold Sam back now. Within seconds he would be scurrying up the gantry tower, attacking vital wiring, ruining certain delicate and acessible components and finally positioning himself in a strategic position to be detonated.

Sam was one hundred fifty meters away from the rocket's base and starting to slow down.

After releasing his dog, the soldier had radioed Security. Now a swarm of vehicles raced across the concrete, toward Sam, the rocket and the stinking weapons.

With a jolt, the controller noted Sam's slackening pace and was immediately alert; was Sam's hurt leg finally giving out? No, the only unusual reading was on the olfactory monitor, but it was powerful and was affecting Sam oddly. His instinctive areas were in great agitation—the

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cerebral command area was being suppressed. The controller stepped up the power on the command frequency as much as possible without damaging the relay satellite's circuitry; but Sam did not increase his speed. It baffled the controller completely.

Suddenly it was over. Ignoring the commands ringing in his tiny brain, Sam changed direction as the stinking weapons took effect. The controller did everything in her power to make him head around to the rocket, but to no avail. Under her electronic battering Sam reeled, staggered, jerked and leaped, but kept on doggedly toward his goal.

It was with another flash of painful insight that the controller realized that the situation had become hopeless. Everything she had done so far, all the agonizing, the joy—all was meaningless, all for nothing.

She felt no bitterness—the time was past for that. Her fate was very close.

With precise motions she armed Sam and detonated him. Then she sat back, released, to think of pleasant things, to remember good days, until her arrest and execution.

SAM'S death shattered concrete and made a sound heard more than a mile away, scattering the rat over a five-meter radius.

In seconds the cars were there, the jeeps and the trucks. This was not Security's moment and the agents stayed back. Now the technicians came, antiseptic men to scrape Sam off the concrete.

A limousine rolled up to the scene, disgorging a general and two more antiseptics. All three walked to the scorched patch that signaled blast center. They stood looking at the seared concrete for a moment. Then a whitecoat reached down to the steaming film of homogenized rat and picked up a skull fragment. An aluminum tooth still dangled loosely from it.

"I don't believe it," he said, staring at the bone chunk. "This thing is supposed to be back on the perimeter wire, according to our detectors."

The other tech shrugged. "It's beaten all our defenses. Looks like another modified rat. A damn good one, too, to get through everything we put out."

"But it didn't get through," the general pointed out. "Your people stopped it."

"We were lucky," answered the first whitecoat, dropping the skull fragment. "I'm not sure that we can do it again."

"Fantastically clever, though, to appeal to the thing's most basic urge—say, let's get out of here. That smell's giving me a headache."

The three men departed, as the Security guards moved in. They began collecting the weapons that had stopped Sam 47, super-rat: caged female rats in heat induced by synthetic harmones—and reeking of artificially fortified musk. ★

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THE DREAM MILLENNIUM

(*CONCLUSION*)

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JAMES WHITE

WHAT HAS GONE BEFORE

JOHN DEVLIN is awakened from cold sleep by ship's computerized system and told he's seventy-five years into mission: man's first attempt to colonize a star system other than his own. He is computer-instructed to check ship's systems, then his own voluntary/involuntary bodily functions, circulation, sensorium, speech organ and memory. His period of awakening is for one hour. During this time he is to speak, exercise and try to remember his cold-sleep dream. In his dream he was a primitive, ocean-dwelling life form, inordinately hungry—and was himself eaten by a carnivorous cephalopod while eating a trilobite.

His second awakening comes 282 years into mission. His instructions are as before, but in addition he's told to go to the ship's control center to evaluate target system three. The ship's computer had bypassed the first two target star systems as unsuitable for human colonization. Number 3 is a perfect, Earth-type planet, unpolluted and verdant—but is entering Roche's limit and will soon break up to become a ring system around its primary. DEVLIN rules no landing, obediently remembers last cold-sleep dream: in it he was an enormous brontosaurus and was killed by a small, carnivorous allosaurus.

On his next awakening—323 years into mission—he is told to check a malfunction in Blue 31, a colonist cubicle, and discovers Colonist YVONNE CALDWELL, 18 biological years old, improperly frozen and dying. At the end of her last waking period she had tried to communicate with her boy friend, also a colonist, and had not made it to her cold-sleep casket in time. DEVLIN makes her death as comfortable as he can. Before returning to cold sleep he is required to remember a complete day in his life prior to starting on mission.

He had been a physician and remembers three instances of violence he had attended on an Earth made uninhabitable by its inhabitants: 1) a young man wounded as a bystander in a duel between his father and father-in-law; 2) a lovely young girl, PATRICIA MORLEY, who had disfigured her face to discourage murderous duels between her suitors; 3) a dead boy, victim of a chance bullet fired during riot in another part of town. During the same day he also meets a rather mysterious man known as BROTHER HOWARD.

DEVLIN's fourth awakening is for the purpose of evaluating another possibly habitable star system. The system is already inhabited—by

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technologically advanced aliens who have polluted it and send spacecraft to destroy DEVLIN's ship. He performs evasive action.

Before being permitted to return to cold sleep DEVLIN is instructed to remember another episode of past life. He chooses his first date with PATRICIA MORLEY, which BROTHER HOWARD intercepted to recruit both DEVLIN and PATRICIA as starship crew. They pass psychiatric testing by HOWARD'S associate, psychologist Dr. MARTIN. Cooldown follows and this time DEVLIN dreams he's a medieval prince who grows up to be king and wage successful war on a neighbor kingdom. He marries his vanquished foe's daughter, who detests him and, after giving him two sons, causes him to be assassinated.

DEVLIN'S next awakening is 603 years into mission. He's told to remember pre-launch instruction and dreams, is startled at the totality of his recall of everything—including terrifying cold-sleep nightmares. He also discovers another dead colonist, identifies him as THOMAS PURDY. The discovery delays his return to sleep casket and computer wakes PATRICIA MORLEY to see what the trouble is.

DEVLIN and PATRICIA decide that PURDY had in effect committed suicide to escape cold-sleep dreams—they also experience desperate fatigue, decide to override computer and try natural sleep to recover. Results are so gratifying that they program computer to instruct all those on board to try normal sleep breaks to lick cold-sleep nightmares.

Before returning to cold sleep DEVLIN recalls the moment when he had discovered, during training for this mission, that BROTHER HOWARD had once been a stellar astronaut, one of the first to experiment with hibernation anesthesia in space—a legendary figure.

XXII

THE dream began very badly with a long and rapid succession of deaths. Like an endless deck of playing cards dealt face upward, they were presented briefly and with all the details clear before being replaced by another face of death with a greater or smaller value of fear, violence or pain.

There was a card for the brontosaurus and the trilobite and the cave-dweller and the old king and many, many others he had not experienced before. There was the instant barbecue of the old schoolteacher, the drunken agony of the salesman spitted on his car's steering column, the frantic coughing of the soldier drowning in the blood from his throat wound and the airliner pilot who had his third cervical vertebra and a large section of his lower jaw blasted away by a hijacker's bullet.

Some of the deaths were much worse than the others and a few were almost pleasant. These were the slow, comfortable deaths from wasting diseases or exposure when the breakdown of circulation brought drowsiness and a feeling of warmth. But even those cards, although free of the symbols of violence and pain, were often stamped with the dark and

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dreadful markings of fear of death itself and of what might come after.

Only gradually did he become aware that he was able to make comparisons between these terrible or merely unpleasant deaths and, much later, that he was an individual called Devlin who suffered it all but was at the same time detached from everything that was happening to him.

Devlin did not know how long it was and how often he died before he discovered that he could exercise a small measure of control over the process.

He began by trying to hold on to the less unpleasant dyings for as long as possible—those comparatively painless or those that had pain associated with them but where the fear of death was absent or of secondary importance because of anxiety for or pleasant memories of loved ones. Then he learned how to push away from the death instants, to go farther and farther back in time into the period preceding the continual and fearfully detailed dyings.

The deaths were not banished or forgotten—they were still the most intense and painful episodes in the dream lives. But now he could be selective, he could tune for the less savage and painful experiences leading up to death in the hope of going even farther back to times when he had known only life and pleasure instead of death and pain.

A few of the cards Devlin had already seen, but very briefly . . .

He *was* a good salesman and always had been since he had joined the organization at the age of twenty-two. Section heads, supervisors and sales directors of increasing seniority had commended him for his youthful enthusiasm and complete faith in the product of the moment. He had always given every sales pitch everything he had, and he had had a lot to give.

Offers of promotion had come early, but less and less often. Customers were so much wax in his hands, but for some reason he was unable to inspire fellow salesmen to anything like his own enthusiasm. They were a cynical bunch, in general, who refused to share in his act of faith in the company and its product. So he was given selling assignments of increasing importance because, it was said, his talents should not be wasted on a purely supervisory job, and his commissions and expense accounts were the envy of all except his mother.

She did not like the way he worried about his work at night—that was in the early days, of course, when he spent most of his spare time at home. She was also fond of telling him that he did not have to be successful at everything to be happy, that she had stopped being taken in by his sales pitch shortly after his tenth birthday and that if his father had been alive he would have told him to change his job.

Talk about his father always made him uncomfortable because her voice reminded him, just a little, of the tone he used while referring to his merchandise. When his father had died he had

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been too young to feel any sense of loss or grief, and the pictures he had seen of his parent had shown a pretty average person—the kind who could be talked into buying anything.

But somehow this colorless individual had sold himself to his mother so successfully that, even twenty years after his death, she remained faithful to the original product to such an extent that talking about him made her almost happy. He had never been able to understand how his father had been able to achieve this effect, but the reason was probably that he himself had been unwilling to spend the time and effort necessary for such a long-term sales project as marriage.

But then a good salesman did not need to be married to get a girl.

Nowadays he could not get girls so easily and sometimes not at all. His boyish enthusiasm did not sit well on a face whose red-veined nose and deep etched wrinkles were anything but boyish. He had almost lost today's client despite the half bottle he had killed at breakfast to fortify himself for the fray.

It has been a tough fight at that, lasting most of the morning and through a three-hour working lunch, and he had won it by sheer, dogged persistence that had been close to desperation. Having won he had celebrated, mostly because he liked celebrating and to dismiss any lingering self-doubts troubling him. His desperation had not, he was sure, been apparent to the client, and the sale had not been won because the client had felt sorry for him. He would continue the celebration as soon as he got back to his hotel.

He was into the parked truck with its muddied rear lights so suddenly that he had only time to desperately swerve his steering.

A fast, relaxed and accurate driver, he was fond of telling people, had no need of a safety belt. Instead of burrowing under the truck's overhang and hitting the differential he ran into the tires of the enormous double wheels, and he did not bounce because he was stuck fast on the steering column . . .

And another familiar card came up.

The large, cold drops of rain slapped at the canvas cover with a sound like distant gunfire and the vehicle's slow lurching progress along the dark street made his head roll from side to side and allowed the droplets running down his face to collect inside his collar. Facing forward, his elbows hooked over the support rail and, his weapon at the ready, all he could see was a stretch of shining black road surface pitted and wrinkled by past petrol bombs and carpeted with half-bricks, broken bottles and pieces of smashed pavement. The houses on each side of him moved past, their downstairs windows glowing or flickering as interior lights or a TV screen's glow tried to fight its way through the heavy drapes, while

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the dripping hedges and front garden, some shaggy and some neat, could have been hiding anything.

He felt too cold and wet and miserable, he realized suddenly, to have any room left for fear. No terrorist, he was sure, would risk pneumonia by setting up an ambush under these conditions. They would probably be watching television like normal people—especially the news coverage of their shootings and bombings or the mouthings of the pundits discussing the possible political ramifications of the latest blast. Or they might be plotting around the fireside or up in a bedroom with their wives or girl friends, engaged in seduction rather than sedition. Which made him wonder if the women concerned were bothered by the fact that the hands caressing them had, a few hours or days earlier, been responsible for killing one of his mates or an uncommitted civilian with a bomb or a rifle or a rocket launcher. He wondered if—sometime during this tour of duty—he killed someone he would be foolish enough to tell her about it. The circumstances were completely different, of course, but when he got on to this particularly uncomfortable line of thought he sometimes wondered if he had the wrong job.

Tonight he was so cold and miserable he *knew* he was in the wrong job.

The unlighted or heavily curtained windows paraded past. Sometimes he imagined that the curtains moved or that the venetian blinds twitched. Possibly there was a gunman drawing a bead on him, or a terrorist sympathizer keeping him under observation—or he was being watched by a curious youngster who couldn't sleep. The rain was beginning to trickle down his back.

He was rounding a curve in the street and passing under a lamppost when the firing started—a couple of rifles, it sounded like, and a Thompson to make him keep his head down while the sharpshooters tried to pick him off. He was out of the vehicle and flat on the ground with the others before he actually thought about doing anything—a reaction, the corporal was fond of saying, that demonstrated the trained reflexes of the professional soldier—while the bullets whanged off the bodywork or punched holes through it. He rolled through a shallow puddle until he was partly under a garden hedge. The noise made it hard to think. Despite the heavy terrorist fire he could not spot any of the flashes from his position. Suddenly his foot was gripped and shaken roughly.

"Get that damned light!" said the corporal. "We'll cover you."

He rolled away from the hedge and onto his back, took careful aim at the center of the fluorescent lamp and did as he had been told, losing what remained of his night vision in the process. He blinked rain out of his eyes and returned to the shelter of the hedge again as the shooting became less accurate and began to die away. He could hear the whine

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of a couple of heavy APCs tearing along the street which paralleled this one, trying to cut off the gunmen's retreat. Beside him someone loosed off a shot, but all he could see were the floating green blotches left by the street lamp.

The hedge was not an effective shelter. Not only did it allow bullets to whip past unimpeded, its leaves saved up the rain and dropped it on him in small, irregular torrents. But the dripping hedge reminded him of another wet evening many years ago and he decided that he could tell Jean about this evening because she would enjoy the joke.

Long before they had been married there had been another hedge in a very secluded spot near the road where Jean lived. The first couple of times he had been out with her they had not stopped at the place, but on the third occasion it had been Jean's birthday and he had put a lot of thought and effort into showing her a good time and they had stopped. A few minutes later the great granddaddy of all cloudbursts not only dampened their ardor but washed out his main plan of attack.

There had been other secluded spots and hedges when his strategy had gone very well and the final assaults had met only token resistance. And after every one of them they had always remembered and laughed over that first wet hedge. Now David was four years old and there was a boy or a girl at minus two months, and they could not make up their minds which they really wanted. It was a very permissive society, these days, and it seemed to be getting sick and violent with its freedoms. He had enjoyed the permissiveness, but for a girl-child growing up his world might not be so good. Parents of girls had a lot to worry about.

The bullet ricocheted off the curb and tore a large uneven hole through his neck, rupturing the left carotid and opening a passage into the trachea. The sudden, burning pain made him want to scream, but when he drew in his breath a thick, bloody froth flooded into his lungs, strangling him. He grabbed at his throat with both hands, coughing to clear the obstruction, and felt air and warm bubbles squeezing between his fingers from the entrance and exit wounds, but when he tried to breathe in there was no air, only the warm spurting wetness.

Very soon he was dead. But not nearly soon enough . . .

Another life card.

"Airfield Two. This is Golf Alpha November Mike Zulu," he said in quiet fury. "I am approaching the coast on a bearing of two-eight-seven at flight level seven-five-zero. Landing instructions, please."

"Mike Zulu, Airfield Two. Remain on present heading. Reduce to flight level six zero. You have twenty-eight miles to run to touchdown. Visibility is ten miles. Wind gusting to twenty knots.

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Request aircraft type and passenger details."

The voice was devoid of emotion, the diction was good and there was no indication that the man was gloating.

"Nimbus Five Transonic," he said. "Seventy-five per cent load. Six hundred and twelve adults, fifteen children plus crew."

A Nimbus yet! The only suitable runway is zero four. It is barely long enough and a bit rough and you will have an eighty degree crosswind port side. We suggest you divert."

Before he could reply the edge of a very hard hand was rubbed painfully along the side of his neck, and the man standing behind him said, "No."

"I have been requested to land at Two," he said.

"Understood. But remind your friends that we have a profit-sharing arrangement with the other two airfields, and if you crash that aircraft there will be nothing or nobody to ransom."

The hand rubbed his neck even harder.

"My friends are impatient as well as greedy," he said. "A diversion is not possible."

"Your funeral. Reduce flight level to five zero. Maintain present heading."

"Five zero on present heading," he said, then furiously to the man behind him: "I don't give a damn if you commit suicide, but there are others involved."

The man behind him laughed softly, then asked, "Can your copilot land this thing?"

He wanted to say, *No,* because it was the truth and his second officer knew that as well as he did—but being young and inexperienced was something that happened to everyone at some stage. Instead he said quietly, "In these conditions we will both be required to land this thing. You must understand that these supersonic jobs have to put down an awful lot of flap to slow us sufficiently for a landing. And during the last half-minute we will be holding on to the sky with our fingernails in an attitude that is dangerous if the wind velocity and direction are not right. With gusting conditions and maximum flap we could fall out of the sky or the ground effect could—"

The edge of the hijacker's hand struck the side of his head just above the ear. It was not a hard blow, not painful, but it was a conversation stopper.

For the next few minutes he maintained an angry and helpless silence. This had been no ordinary hijack operation or the security guards—traveling incognito even to the crew, and numbering one to every fifty passengers—would have been able to stamp on it. The disguised guards had picked up their weapons inside the aircraft and the loading tube detection system would have ensured that nobody else carried a weapon on board. He was still not sure of what had happened exactly, but his senior hostess had been able to reach the flight deck and tell him something about it during the minute or so before the man

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behind him had arrived and broken her back.

Apparently the hijackers had staged an incident during which one of their number caused a near-panic in his immediate area by producing a shaver with a black plastic casing that looked like a weapon. This has caused two of the guards in the vicinity to break cover and several others to tense up sufficiently for them, also, to be spotted. During the milling around that followed, hijackers had disarmed these guards using killer-karate. Not all of them had been successful, but enough of them had been able to get weapons to shoot it out with the remaining guards who had, of course, been hampered through trying to avoid hitting innocent passengers.

During the ten-minute gun battle the great tubular barn that was the main passenger cabin had suffered a sharp pressure drop. But as all of the guards, four hijackers and seventeen others had died the remaining passengers thought themselves lucky to have only bleeding noses and earache. He still did not know why his senior hostess had had to die simply for giving him a situation report.

He liked to understand people even if he did not agree with their point of view, and he knew some of the reasons why this intelligent, highly-trained and resourceful team of hijackers had taken his aircraft. But the senseless display of violence in killing Nancy, a completely unnecessary murder performed with an utter lack of feeling, made him so angry that he felt physically ill.

"Maintain present heading, Mike Zulu. Reduce to flight level four five zero. Twenty-three miles to run."

"Mike Zulu," he acknowledged, then tried again.

"One of these days," he went on quietly, "the governments are going to stop paying ransom money for hijacked aircraft and passengers and then you will be out of a job. And this green and pleasant land below us, with its thriving pirate economy, will feel the pinch. No government wants to be the first to throw three or four aircraft and a couple of thousand passengers to the wolves, of course, but there are a couple of administrations on the point of doing just that. It will take just one to make the decision and the rest will follow.

"When that happens you, and the people below, will not have the benefit of consumer goods smuggled in at top prices," he continued, "because you will have no money. You will have no money because your currency will be declared valueless and any you may have salted away on the continent will be frozen—the measures are already being planned. You, assuming that you are the brain behind this hijack, should be intelligent enough to realize that you can't possibly continue to—"

He broke off as one of the hostesses, looking pale but with her voice steady enough, excused herself and asked for instructions.

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"We shall be landing on a runway that is a rather tight fit," he replied easily and smiled at her. "This means that I shall be making a steep approach, shoving on reverse thrust a few seconds after touchdown and stepping hard on the brakes. Make sure that their straps are tight and check the tables for loose objects. Right?"

"If the runway is short, sir, how will we get off again?"

He smiled reassuringly, thinking that the girl was too intelligent for her own peace of mind, and said, "This has happened to me before. The ransom covers the passengers, aircraft and crew but not the baggage and freight. We will be much lighter at takeoff."

"Yes, indeed," said the man standing behind him. Perhaps he was irritated at being left out of the conversation, in which case he had displayed his first human feeling.

When the girl had gone Devlin's dream identify went on, "I am not probing for information useful to our security people and it doesn't matter to me whether you are free-lance or employed by the government of this country. The people down there do not officially boost their own hijack trade and you would never admit that you had been smuggled out as refugees to set up this operation.

"And you could be telling the truth," he continued, "because if you had come from this country you would do as Airfield Two suggests and divert. So you must be a free-lance group hoping to set yourselves up here with your share of the ransom. Fair enough –but there will be no ransom for anyone if we flop over and burn on Two's runway, will there? And I hate to say anything complimentary about an operation that places so many people in jeopardy, but this job showed planning of a high order and considerable intelligence. Surely the same degree of intelligence and forethought will tell you that–"

"Turn three degrees on to a heading of three-zero-one, Mike Zulu. Descend to flight level three zero. Eight miles to run. Have you the airfield in sight?"

"Mike Zulu. Descend to three zero on three-zero-one. I see you, Two."

Behind him the man changed his captured gun from one hand to the other, but made no attempt to answer any of the questions.

Angrily Devlin's dream identity said, "This is the most beautiful, unpolluted and underpopulated country in the world. It has always been beautiful, of course, and in the past it was very popular with tourists. But it is free of pollution because there is virtually no industry and its technical skills have gone with its people–those who were lucky enough to get away before immigration was forbidden. Now there is no one who wants to come here except people like yourself. The lower orders of farmer and laborer are also trying to leave, many of them dying in the attempt. The country imports everything except a small proportion of its food and exports nothing at all–and this beautiful and

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dangerously unstable country is where you want to spend the rest of your lives. Can't you see how stupid that is?"

The man sighed faintly but did not speak.

Ahead of the plane the airfield was a tiny, flattened plus sign, pale gray against the hazy green patchwork of the surrounding fields. He made a last desperate appeal to the hijacker's humanity as well as his reason.

"You are not trying to right a political wrong or serving the cause of any minority group by coming here," the dream-Devlin said. "You come to this place only if you are in this for the money. Fair enough—greed I can understand. But why gamble on losing so much when a twenty-minute diversion would give you a certain win? Or is it a feeling of power you need? The feeling that you are so much more vital and important than the majority of poor, hardworking, dull sheep that their suffering is too small a matter to affect you? Or maybe this time you want to *share* their feelings! Are you, then, so terribly bored with life that you want to know what it feels like to be broken and torn apart and breathe in the fire of burning fuel—"

He broke off, then added coldly: "I'm going to be very busy for a few minutes. Your answers can wait until after we land."

Two's main runway was opening out below him like a gray isoceles triangle, spotty with clumps of weeds and cow droppings. The grass had not been trimmed for many years and the wind sent broad, green ripples hurrying across it. With maximum flap and barely enough power to stay in the air he aimed at putting down on the runway short of the threshold markings, because for this landing every yard would count.

As well as catching the fully-extended flaps like a sail and pushing up the port wing, the crosswind necessitated a crabwise approach that would have to be corrected at the latest possible instant before touchdown if he weren't to smash all the tires and probably rip off the undercarriage bogeys. He rounded out over a patch of swamp about a quarter-mile from threshold, with his stall warning having hysterics and his wings dipping first to one side and then the other as he compensated and overcompensated for the gusting. During the last few seconds before touchdown he found that he could anticipate the gust effects by watching approaching wind ripples in the grass and as she began to sink he brought the nose on to the centerline of the runway.

He felt two tires go and checked a slew to starboard while he dumped lift by running out the spoilers and calling up full reverse thrust. He would stick to the ground now, but the other end of the runway was rushing toward him at an incredible rate. He applied the brakes much harder than recommended for the present ground speed, then harder

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still. He felt another tire go, then three in rapid succession. Between them the landing bogeys had thirty-six tires and if the bursts were fairly evenly distributed among the three bogeys he might be all right. But apparently they weren't and she began a slow, inexorable yaw to port.

He was sure that the port wheels were about to go off the runway by the time he checked the yaw, and he had a glimpse of a man writhing about in the grass with his hands pressed against his ears and a noise-maddened cow running across the verge, but he did not feel the aircraft hit either. For an instant he thought cynically that a pirate airfield with a too-short runway did not deserve a minimum noise approach and landing, and that in any case they would probably add the broken windows and curdled milk to the ransom amount, just as they would insist on an extra ransom for the aircraft and maintenance crew needed to fly in and fit the spare wheels to this brute before she could take off again.

Another tire blew as the forward bogey stopped within a few yards of the boundary fence. He shut down everything except the auxiliary power unit serving the flight deck and cabin systems and settled back in his seat.

"A very nice landing, Mike Zulu."

"Thank you, Two."

Behind him the hijacker laughed softly and said, "I don't think that a highly-trained, hard-working sheep like you will appreciate it, but this is the only answer I've got."

Something crashed through his head so fast that neither the pain nor the sound of the shot had time to register before a terrible darkness swallowed everything.

BUT the darkness was not permanent. It became an infinite area of black velvet on which cards were displayed briefly before being replaced or covered with other cards. Some of the cards were closely linked, such as the one for the co-pilot whose skipper had been killed before his eyes and who had crashed one of the world's largest jets on takeoff—or the one of the hijack team-leader, whose action in killing the aircraft's captain had led to the death of all the passengers and crew a few days later and in turn precipitated a crisis that wrecked the pirate economy of his adopted country.

That hijacker, too, suffered briefly but intensely before he died. But his life-card was difficult to scan, the lines of cause and effect were tangled and his emotions and drives needed too much effort to understand, if they could be understood at all. There were not many lives like his—the majority, although painful in places, were easy to understand. Some of them were surprisingly rich and pleasant and many of these belonged to people whose lives, measured against the yardstick of Devlin's now vast and varied experience, should have been utterly miserable from the moment they had been born.

Devlin had learned how to hold a life long enough to examine part of

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it, usually the last part, in detail . . .

Lit by the last light of sunset, the great cranes of the long-abandoned docks and shipyard stood out against the darkening sky like a sketch executed in blood. In more than fifty years of disuse they had rusted but they had not fallen down, just as the ships along the dockside had rusted and sunk at their moorings but had not gone away. They had, instead, grown outward as their hulls silted up and provided greenery for nesting swans and seabirds. One of the swans, deep pink in the fading light, drifted in mid-river as if it had nowhere to go.

Like all the rest of us, he thought.

Aloud he said, "This kind of approach has been made to me before. I don't want to listen to you naming names in high places, or to your plans for overthrowing the Council, or to you extolling the virtues of the cause that is driving you to do these things. I am utterly disinterested in anything you want to say or do. I have heard it all before."

"Yes," said the young man, "and you've done it all before."

He leaned his elbows on the parapet of the bridge and sighed, unable to make a negative answer.

"You are going to listen because this will interest you," the other said fiercely. "We know you were a master tactician once, that you planned and carried through one of the neatest coups in recent history and that you could have had a high place in the Council if you hadn't dropped out of sight and become a schoolteacher."

"That," he said dryly, "was a tactic of survival. Considering the number of times that the Council has been replaced since then—"

"They'll be replaced again—and soon if—"

"I'm not interested in listening to treason either," he said tiredly.

He could almost feel the intensity of the young man's gaze on the side of his face as he continued to watch the swan. Then the other said, "I agree—you are the survivor type. But there are times when one must take risks to go on surviving and right now we want you to take a very small risk. What we need is your advice—the benefit of your early studies and experience—for a small and not very bloody revolution."

"I've had my revolution and seen the results," he replied, still without turning. "No."

The young man gripped his shoulder and pulled him around until they were face to face. He said, "Listen to me, you soft old man! This country is dying on its feet, the Council members are growing fat in their keeps and the local commanders in their fortified farms are not much better. Even the sheep have ceased to care that we are drifting into a feudal economy, even though one of the most technically advanced countries in the world can be seen from where we're standing on a clear day. You once had the good of your country at heart. You had ideals you were willing to die for—but you did not die. Your

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wife did—and you ran away from everything and ended up teaching children—sheep children at that. You were good, the best—but not intelligent enough to realize that people must suffer and die for every advance."

What advance? he asked sardonically. But he asked it silently because he was, after all, still trying to survive.

"Naturally we will handle the execution of the present Council and any local commanders unwilling to support us," the young man went on. "But there are a lot of important people who want to play safe and who will not back us unless they think the takeover has popular support. This is where you come in. Specifically, we need your expertise in setting up a popular rebellion situation. Something that will wake up the sheep, make martyrs of as many as them as seems necessary and get them personally involved in—"

"The sheep won't get involved any more," he said and looked at the other's hand on his shoulder until it was taken away. Then he went on: "The less sheepish ones have either left the country or become lower-grade supporters of the Council. The rest are patient, long-suffering and cynical."

The young man shook his head angrily and said, "We really are trying to better conditions for everybody this time—even the sheep. We have ideas for resuming trade with the mainland—legitimate trade that will enable us to build up some foreign credit. Instead of a subsistence level economy we'll be able to afford a few comforts again, and we'll be able to rise once more to become—"

"What exactly will you trade?"

"I see you're becoming less disinterested, old man," said the other, smiling. "We trade something that those soft, bored, overcrowded and polluted foreigners do not have—space, clean air, scenic grandeur and, most of all, excitement. We invite parties to join safaris into what used to be the most dangerous country in the world. We will take them to the historic places where it all happened fifty years ago, and we'll put on a show for them with bombings, ambushes and the rest of it. Some of them may even get hurt from time to time, but not badly. They will probably want to bring their own medics with them and pay us well for the privilege. But right now we need two things and one of them is you.

"We need you because you have done this before, and very successfully," the young man went on excitedly. "We are willing to pay a high price because we want it to be obvious that this is not simply another change of Council faces, but something different and much better. Instead of a Council composed entirely of people in their twenties and late teens, we'll have a new one led by an older and wiser head, someone with intelligence and judgment and experience, someone the foreigners will be inclined to trust. Now get interested, old man—because we are offering you the top job!"

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He was silent for a moment, thinking about his experience and qualifications—because of one experience his qualifications were gone.

In those days he had been young, self-confident, idealistic and able effectively to compartmentalize his mind so that the necessarily evil acts—which he planned and others carried out—did not trouble him. He and everyone had known that a greater good would come of them. He had been sorry, in a clinical fashion, for the innocent sheep who died or were maimed, but he had thought of them as statistics and had always tried hard to keep their number as low as possible. His wife had been, of course, far too sympathetic in her nature to be told of the work he had been doing, even if he had been allowed to tell her of it. But then one sunny afternoon outside a supermarket she had become a statistic.

He remembered her beauty and warmth and the concern she had felt for everything and everyone who suffered, the peace he had known in being with her, just watching her movements and expression and the incredible passion, so slow to kindle, with which she had loved him. For many years he had forced to the back of his mind and locked up in its compartment the picture of the torn and dismembered thing he had had to identify, but now the door was open again.

He swallowed and said, "The top job, eh? But you mentioned needing two things."

"The other is money," said the young man. "Money for arms and to pay off the local commanders whose estates will be used during the initial safaris. But the money is coming in nicely as a result of some minor-key hijacking of private aircraft—"

"That is insane!" he burst out. "We were warned what would happen if we ever tried that again!"

"Bluff," said the other, laughing. "Sheer bluff. Too many governments would like to move in here and we can play them off against each other. They need this underpopulated piece of real estate—they each need it so badly that none of them will let another take it. So relax. All but one of the aircraft were small, they were brought down in ordinary fields closed to our supporters' keeps, and the ransoms were ridiculously low by former standards. The reason for that was that we were also testing the hostages—they were private plane owners and their rich friends, remember—with the safari idea, and they all seemed keen. There was nothing in the foreign newspapers or TV about the incidents, so obviously everyone is keeping quiet and playing ball. And with the latest job, a two-hundred seat VTOL, they paid up promptly and with even less fuss than before.

"This idea is going to work, old man," he ended, with great certainty in his voice. "We have something to sell, something they want badly enough to ignore a petty irritation like a few hijack-

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ings which will, in any case, stop as soon as the safari trade gets going. Well, what do you think?"

All at once he felt deathly tired and, surprisingly, not at all afraid. He said, "We have sold, or at least exported, ideas and methods that have wrecked cities and countries all over the world. For that we have been isolated like a sociological disease. Now you have developed a mutated strain that might possibly allow the disease to spread once again. Haven't you considered the possibility—no, the virtual certainty, dammit!—that if one of them can't have us they will make sure nobody will."

He turned once again to face the river mouth and the sea. A few minutes ago he had opened a frightful compartment in his mind, but there were many other compartments in which his wife was alive and beautiful and loving, and he wanted to open all of them while there was still time. The light had almost gone, so that the swan drifted in the black water like a graceful ghost and one bright star—or perhaps it was Jupiter—lit the darkened sky.

And then she came homeward,
With one star awake,
As the swan in the evening,
Moves over the lake.

"What?" asked the young man irritably, making him realize that he had been thinking aloud.

"I was remembering an old song that my wife liked to sing."

"That's sheep thinking!" the other said angrily. "We're offering you the number-one spot and all you can think of is—" He broke off and swung around to stare across the city and beyond.

The sky had lightened again in the west and suns were rising in all the wrong places. But before he could even feel afraid and long before the sound of the nuclear explosions reached him, the sun aimed at this particular city burst above his head with a flash of impossibly bright light that was followed by absolute darkness.

XVIII

THEIR lives pressed in to fill the darkness—lives in uncountable numbers and all clamoring, it seemed to Devlin, to be remembered. Most of them were ordinary lives at first feel, but even the mundane ones had their moments of glory which made them unique and, in the majority of cases, the equals of the brilliant, hyper-sensitive individuals who sometimes created without control, who sought power without responsibility and who were flawed without ever having tried to correct their flaws.

Some of the flaws he observed were minor and easily overcome. Others were major and overcome with extreme difficulty and many were impossible to overcome no matter how hard the individual tried. The flaws ranged from petty dishonesty, selfishness, minor-key destructiveness and character assassination in otherwise normal individuals up to the bright, fuzzy, helpless struggles of a short-lived mongoloid and the perverted intensity of feeling experienced by men deeply and emotionally involved with other homosexuals.

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Viewing all with complete knowledge, Devlin could no longer be sure what, if anything, was a perversion—to understand all was to forgive almost everything. But he still felt repulsed by some aspects of life, principally the perversions which depended for their pleasure on the sufferings of others. To him it seemed basically wrong that one person's pleasure should cost others pain. As a result these lives as a whole were highly unpleasant to recall—save only for a few youthful incidents—so that they hung in the dark outer fringes of his memory like books in a corner of a library that was rarely visited.

Death, suffering and sex left the strongest impressions in every life—this was probably the reason Devlin had almost been driven to suicide by the earlier cold dreams. But now he could be selective in his choice of individuals and incidents and he was beginning to enjoy the process when a gradual diminution of sensation made him realize that he was coming out of cold sleep.

He tried to fight it for as long as possible by holding on to his most recent selection, an incident following a domestic quarrel when both parties were pretending that it had never happened but had not reached the stage of kissing and making up. The period was contemporary, or perhaps a decade or two in Devlin's Earth past, and the rather one-sided discussion was taking a philosophical turn which gave it applicability to the present . . .

Their house had always been too small and the area of the tiny back garden was further reduced by the thickness of the tall hedge on three sides which gave privacy and a feeling—only a feeling—of security. Caught in that suntrap and sandwiched between the hot, dry grass and the nuclear-powered heater in the sky, he felt himself begin to relax enough to start apologizing.

"You're right, dear," he said, staring sunward through the bright redness of his closed eye lids. "This place is no longer safe. It is also becoming too expensive. I was hoping that it wouldn't be and was trying to keep it going, which is why I accused you of being ungrateful and never satisfied . . . Well, anyway, living in a Block will be much less expensive and, even though the sunshine will be artificial, the place will have effective group security and we won't have to worry about—"

"I know what you said about the statistical element is true," she broke in. "There are far too many people like ourselves for us—for this house—to stand much chance of being hit. But yesterday was the first time I actually *saw* Maxers in action. She—she was a shoplifter the store detective had caught outside the main entrance. The Maxers pushed him away and cut off her hand. They *enjoyed* doing it—."

Her hand crept into his and he squeezed it reassuringly as he said, "Maximum Response looked liked the answer a few years ago. The soft approach of the psychologists and sociologists wasn't working and society brought back corporal

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punishment administered, if necessary, by citizens on the spot. But now was have so-called citizens going around searching for crimes to punish, and the idea of maximum response to minimum offenses, while it sorted out our crime problem in short order, has been twisted out of shape like all the other good ideas. Now we're getting Maxer gangs setting up minor incidents for them to react to, or even delivering a maximum and downright murderous response to a mere rumor of an offense—and *they* start the rumor."

"It isn't just the Maxers," she said, moving so that her sun-warmed arm and leg were pressing against his. "I read last week that four hundred violent deaths per day—that includes night, too, of course—is now considered to be an acceptable figure for a medium-sized city like ours. What is the matter with people? We have enough to eat. There is plenty of entertainment—lots of interesting things to do with one's spare time—and there would be no sickness if the hospitals weren't so overcrowded with nuts who tried unsuccessfully to carve each other up or botched the job on an innocent bystander. Scientifically and culturally we should be living in a golden age—so why are so many bored and angry and violent?

"I'm not really asking questions," she went on before he could speak. "Just complaining. I know you would say that different and often unlikable people have always been responsible for the world's advances in art and science—they prod us ahead more quickly, like dogs snapping at the heels of cattle. Maybe that's what is wrong. The cattle should have been allowed to wander forward at their own pace, getting where they were supposed to go with herdsmen leading them instead of dogs and wolves driving them. I grant you, that we have a few responsible people trying to push us in the right direction. But their attitude of mind is never to consider individuals, only the big picture, and to consider females as mere statistics and unworthy of serious male attention once they pass the age of thirty. It is no coincidence that the proportion of female suicides in this age group is—"

"You," he broke in firmly, "will always have my serious attention, even when you are old and gray and your statistics have changed out of all recognition."

"In ten years," she said more quietly, "I wonder if you will still say that."

Reassurance given too often loses its effect, he thought and tried to move the conversation on to a less sensitive area.

"Of course I will," he said. "But to go back to something you said earlier about boredom and violence coupled with high technology and culture—I've been trying to make sense out of the present situation, too. It seems purposeless and stupid and I certainly don't approve of it, but suppose there is, in fact, a reason

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behind it—perhaps an evolutionary process that went wrong. Suppose the wolves were intended to inherit the Earth, and do something constructive with it—but they were hampered by too many sheep getting underfoot and practically begging to be eaten or beaten or enslaved or used in some other fashion. So, instead of having to fight against something hard and dangerous that would have kept them in top condition, they've been reduced to punching at pillows and feeling frustrated."

"I'm sorry for them," she said with obvious insincerity.

"Seriously," he went on, "let us assume that the present mess the world is in presages the next step up the evolutionary ladder. The cultural level is sufficiently high, as is the technical ability, and there is certainly enough population pressure to force people off the planet. Evolutionary changes are never pleasant and the next one could be the most unpleasant of all, because it might take us to the stars—"

"It might take *them* to the stars," she broke in laughing. "And good riddance."

"Every time I started by saying 'seriously' you end by laughing," he said, shaking his head. "I simply wanted to discuss the idea that, if and when the human race gets out among the stars, it might *not* meet benevolent bug-eyed monsters belonging to beautiful and benign cultures, but instead will be faced with beings so vicious that, by comparison, an Earth tiger would look like a sheep. And if the race managed to survive that contact—perhaps even win—there might be something even more terrible waiting for us on the next rung. In short, I'm suggesting that the universe might not be a pleasant place and that we—the pacifists—by insisting that it should be, are seducing the race from its rightful path and destroying its chance of future— "

"But surely," she broke in, "the race couldn't have reached the level of technology necessary to leave Earth if we hadn't gone in for cooperation instead of conflict. Too many people only want to destroy things and hurt others."

"Only because they are frustrated by having too many sheep telling them they are wrong," he replied. "You must try to think of a pure, highly moral, violent type with the power to use the world's sheep effectively—"

"Power corrupts and absolute—" she began.

"Highly moral and incorruptible, then," he said. "A sublime, violent type."

"Causing sublime and character-building suffering, no doubt." she said witheringly. "That is ridiculous and you know it—and you know I know you know it. You were always pulling that trick at university—starting a major debate to effect a minor change of subject—and you're still doing it." She laughed suddenly and went on: "It worked then when I got too involved in something unpleasant—and it still seems to be working. But before we leave the

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Maxers—I've heard that their latest excuse for turning loose with everything is in defense of a lady's honor. They feel quite noble about defending the honor of a helpless woman to the death—the other person's death, of course, even if the poor man happens to be a slightly impolite husband."

"As I remember," he said, "you were pretty good at defending your own honor. But I'll be careful not to insult you in public."

She was silent for a moment, then she let go of his hand and he heard her roll on to her side and prop herself up on one elbow. Her other hand rested lightly on his chest, then more heavily as she leaned across him. The movement of her head shadowed his face from the sun and he opened his eyes.

He said, "I'll try not to insult you in private either—or have any more stupid fights. But let's change the subject, eh?"

The pressure of her hand became lighter until its touch became the beginning of a caress and her face moved closer to his. She shook her head and said softly, "Not yet, dear. Let's find out if you are capable of a—a maximum response."

It became a very pleasant dream after that, even though the sensations became rapidly less intense as the process of resuscitation was completed. But he was glad rather than sorry about that because, considering the depraved period in which he had spent his formative years his upbringing had been fairly strict and the increasingly ecstatic face above him was familiar.

It was much more youthful and beautiful and relaxed than he had ever remembered it, but there could be no doubt that it was his mother . . .

GOOD MORNING DEVLIN

HE SIGNALED that he was fully awake and in possession of all his faculties by looking around his cubicle, putting one hand on the edge of the open casket and saying, "Good morning, ship."

Devlin was feeling relieved and a bit light-hearted because this time he had been warmed without feeling that the cold dreams had driven him to the vergeness of madness or suicide. He wondered if Patricia and the others had been equally fortunate.

SHIP STATUS NINE HUNDRED AND TWENTY YEARS INTO MISSION. MAJORITY OF SHIP SYSTEMS AND/OR BACKUP SYSTEMS FUNCTIONING. DETAILS OF EXCEPTIONS AVAILABLE IN CONTROL CENTER. SHIP PERSONNEL CURRENTLY AWAKE TWO. IDENTITIES MORLEY AND DEVLIN.

After more than nine centuries, he thought, some of the ship's systems were bound to have failed. But he was looking forward too eagerly to comparing mental notes with Patricia to give this information the amount of worry it deserved.

IT IS PROBABLE THAT SHIP'S PERSONNEL IS EXPERIENCING SEVERE MENTAL DISTRESS AS THE RESULT OF DREAMS ENCOUNTERED DURING COLD SLEEP . . .

"Not this time," said Devlin. But the computer ignored him—natu-

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rally—and continued spelling out the advice and instructions programed into it what seemed like only a few hours ago. It was still good advice and he ought to take it, ought to show a little self-control by forcing himself to sleep normally before rushing out to see Patricia. With luck, she might grow impatient and come in and wake him . . .

REASONS FOR AWAKENING. ONE—MISSION TERMINATION DECISION REQUIRED. TWO—TO CHECK FUNCTIONING OF MORLEY/DEVLIN MUSCLE SYSTEMS, CIRCULATION, SPEECH ORGAN AND MEMORY. PERIOD OF AWAKENING DICTATED BY DECISION-TIME NECESSARY FOR REASON ONE.

INSTRUCTIONS HELD UNTIL END OF MORLEY/DEVLIN PERIOD OF NORMAL SLEEP AND ACTIVATION OF MANUAL GO INSTRUCTION.

"You expect me to sleep after hearing news like *that*?" Devlin asked jabbing at the Go button.

Mission termination decision required. That could only mean one thing—journey's end! But the display was not being very informative.

PROCEED TO CONTROL CENTER WHEN CONVENIENT.

He hurried through the post-awakening exercises and into the corridor, where he met Patricia coming out of her cubicle. There was no need for them to rush to the control center, but they did. The main display was more forthcoming.

SITUATION REPORT. SHIP IS CLOSING NINTH SOLAR SYSTEM TO BE VISITED. OTHERS NOT SUITABLE FOR SEEDING AND BYPASSED WITHOUT CREW CONSULTATION WITH THE EXCEPTIONS OF PASSES THREE AND FIVE WHICH WERE AUTHORIZED BY JOHN DEVLIN.

LONG RANGE SCAN INDICATES TARGET NINE MARGINALLY SUITABLE FOR HUMAN COLONIZATION. EQUATORIAL DIAMETER 9,740 MILES. ROTATIONAL PERIOD TWENTY-SEVEN POINT THREE HOURS. GRAVITY ONE POINT THREE TWO EARTH NORMAL. ATMOSPHERIC PRESSURE NINETEEN POINT TWO POUNDS/SQUARE INCH. TOXIC TRACE ELEMENTS PRESENT IN ATMOSPHERE IN ACCEPTABLE QUANTITIES. INDICATION OF MINOR POLLUTION AND RADIATION SUGGESTING PRESENCE OF INTELLIGENT LIFE-FORM POSSESSING RESTRICTED NUCLEAR TECHNOLOGY.

COMPUTER DECISION TAKEN TO LAUNCH HIGH-VELOCITY PROBE FOR CLOSER INVESTIGATION. COMPUTER DECISION TAKEN TO AWAKEN CREW MEMBERS MORLEY AND DEVLIN.

"I suppose we could adapt to the higher gravity and pressure," said Patricia worriedly, "but—"

"But there are people there already," Devlin finished for her. "And if they should be disposed to be nasty, they'll have teeth."

BEFORE EVALUATION OF PROBE DATA AND YES/NO DECISION ON MISSION TERMINATION, CAREFUL STUDY AND EVALUATION OF SHIP LIFE-SUPPORT AND ASSOCIATED SYSTEMS IS IMPERATIVE REPEAT IMPERATIVE.

"I DON'T like the look of that," said Devlin.

Patricia nodded without speaking, then pressed the recall button and tapped for data replay at half

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speed—they were, after all, supposed to study it carefully. But as the minutes and the bright, sharp data presentations unrolled before them they saw nothing to make either of them feel any better.

The personnel status display gave them the first shock. They had been expecting the telltales of the cubicles containing Yvonne Caldwell and Thomas Purdy to be dark, but not the twenty-three others. The people concerned were not actually dead because they were still safely in cold sleep. But the cubicles concerned were flagging mechanical and/or power malfunctions which would make it impossible for them to be revived.

Patricia looked as sick as Devlin felt.

He was suddenly aware that the bright, clean control center with its gleaming instrumentation, spotless trim and virtually unused upholstery was no longer new, even though it appeared unchanged from the first time he had seen it—less than two weeks or over nine hundred years ago. Despite the surface cosmetics of rustless metal and bright plastic the control center and the ship built around it was *old.*

Devlin shrugged involuntarily as the sheer wonder of it tightened the skin at the back of his scalp. For nine centuries the ship had been picking its way among the stars, a fragile metal pod protecting its human seedlings. The men and women who had designed and built the ship, the programers who had given it the ability to follow its complex instructions while maintaining the lives of its utterly vulnerable charges and the countless other people who had helped unknowingly or unwillingly or who had not helped at all, were long since gone. Even though he could still remember them and the society to which they belonged as if it were last week, they, and probably it, were dead.

The realization so frightened him that he tried hard to be optimistic. But the very most he could hope for was that a sick but surviving remnant of humanity was still living in the polluted wreckage of a once-great culture, on a world so impoverished in material resources that its dominant life form would never be able to pull itself up and into space again. Nor would it ever again be capable of expelling another seed pod among the stars.

Even the pod it had expelled—and perhaps it had managed to shoot out two or three—was beginning to weaken, lose its initial impetus and suffer from a withered casing. Very soon it had to find fallow ground.

Or any ground.

Devlin gestured toward the status board and said, "Do you want to go over it again?"

"I've got a good memory," she replied. She added: "Now."

HE NODDED and began tapping for a rundown on the ship systems, insisting on a slow playback. His memory, like Patricia's, was nearly perfect—but he was not a superman. He still felt like himself even though he could remember every single thing that had ever happened to him and to a countless number of other people. He still felt afraid and stupid and baffled by the complexity

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of the data being presented on the screen.

Or was he?

"I have the feeling," he said, "that I understand what is going on a little better."

"Yes," said Patricia. "I have the same feeling. That instructor—the small, blond one, remember?—knew a lot about the ship's computer even though she didn't tell us anything more than which buttons to push. I'm remembering some of the things she knew."

"I see," said Devlin. "During the attack from Target Five I had a funny feeling that I knew more about the ship's control and guidance systems than I'd ever been taught. I take it that you dreamed about this girl's lifetime.

"No," said Patricia firmly. "I did not dream about her, but I'm getting her memories anyway. She must have spent a lot of time in here, so maybe she is haunting the place." She shook her head in irritation. Then: "That last cold sleep wasn't as bad as the one before, but I seemed to be every woman who was ever born—with the exception of a few twisted and horrible ones that were too difficult or unpleasant to remember. But what is happening to us? And why do I always dream of being a woman?"

"I'm always a man," said Devlin. "Or at least a male. I don't know what is happening to us either." He stopped as a clear, sharp picture of Brother Howard was thrown on his mental display screen. It was the picture in which the Brother looked concerned and spoke without sound. Feeling afraid for some reason he could not understand, he said, "But let's not get sidetracked into a philosophical debate. At least—not just yet."

"I need a philosophical debate," said Patricia seriously, "before I go mad. I need some answers."

"Me, too. But right now let's concentrate on the patient—I mean the ship."

She smiled and said dryly, "Was one of your dream lifetimes a man called Freud?"

As the displays presented their data it became apparent that the patient was in good physical and mental condition, considering its advanced age. The heart was sound—power was available for the decades-long deceleration and just enough fuel for a landing—and capable of at least one burst of sustained activity without failure, provided the effort were called for before the patient became much older. Peripheral circulation and sensitivity were not good, but, again, adequate for a few decades to come. The ship's long- and close-range sensors had suffered from multiple component failures, but it could still see and hear in a shortsighted and dull fashion, which was the reason why they had not been awakened until the ship was passing within the orbit of the outermost planet of the system. The patient needed to hold things close to his eyes.

Not sick, Devlin thought, just senility rearing its toothless, graying head. What he needed now was an accurate prognosis before the brain, too, began to succumb to the aging processes.

He did not realize that he had been thinking aloud until Patricia,

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with her newfound expertise, called up the required data.

ACCORDING to the display, if the system they were entering were bypassed the chances of reaching the next target sun were ninety-three per cent. The power needed to decelerate and return to Target Ten would be available. Data gathering systems would be less than sixty per cent operational. Life-support and resuscitation systems had a predicted failure of thirty-seven per cent. Personnel consumables would remain adequate due to the projected death rate caused by life-support and resuscitation system failures.

SHOULD BOTH TARGET NINE AND TEN BE BYPASSED THE PROBABILITY OF REACHING TARGET ELEVEN IS SIXTY-ONE POINT THREE PER CENT PROBABILITIES OF SHIP SYSTEMS DETERIORATION FOLLOW.

EXTERIOR SENSORS SIXTY-FIVE PER CENT. CONTROL AND GUIDANCE FORTY-THREE PER CENT. COLD-SLEEP MONITORING AND RESUSCITATION SYSTEMS SEVENTY-ONE PER CENT . . .

"That's enough," said Devlin angrily, hitting the Cancel button. To go on would be virtual suicide. More quietly he added: "We don't have much choice, so let's have a look at our new home."

The pictures from the orbiting probe showed a world that appeared to be two-thirds ocean and whose continental outlines were obscured by dazzling weather systems and a thick atmospheric haze. On the adjacent display appeared the figures for the atmospheric pressure and spectro-analysis, gravity, analyses of suspended water vapor and surface liquid from the ocean and inland lakes, measurements of radio and nuclear radiation, pollution levels in areas around the few small cities and towns.

"We'll be able to live there," said Devlin quietly. "It won't be easy at first. We'll have trouble with strained backs and varicose veins. But in a couple of generations we'll grow the muscles to cope and if the natives are friendly—" He broke off, his mind racing too fast for coherent verbalization. Then: "A planet like this should have a much larger population. Considering the level of technology here it should be densely populated, in fact. I wonder—"

He halted the playback on the gray cross-hatching of a small coastal town and stepped up the magnification. Distortion caused by the turbulent but very clean air made it difficult to resolve fine details, but he could see a number of parks, the largest containing a silvery domelike structure, an airfield and a river that bisected the town. There was no evidence of railways or large ocean-going ships or dockyard facilities. For a town the place looked curiously fresh and clean.

"You wonder what?" said Patricia when the silence had begun to drag.

"I wonder why there are no large ships, railheads or major road systems linking those towns. They're so widely separated that air-travel is probably the only convenient way of getting around—but is it enough? I also wonder why the place looks so self-sufficient and why, on the long road up to a nuclear technology, it didn't pick up a few industrial ruins

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and sooty factory chimneys. In short, I wonder if we are the first ship to come along—and if we are not looking at an established colony."

"Yes, of course!" said Patricia excitedly, then, "But would they send two ships like this on exactly the same course? And surely the computer would have told us if the radio signals were intelligible?"

Devlin's elation faded. She was right. The world below, he was still sure, was a colony fairly recently set up—say five or six generations ago at most. But it was not a human colony.

Patricia was already calling up the data from the soft-landed probe.

BY A process of electronic analysis, chemical and biochemical examination and the sampling of plant and animal life in the vicinity, the probe was turning a remote-controlled microscope on one tiny piece of the world, and from its observations it was deducing the makeup of the planet as a whole. For the most part the results reported were negative.

There was no evidence of harmful organisms. There was a wide range of plant and animal life, but the sizes of individual specimens were relatively small due to the greater gravity and, while there were strong indications that some of the larger animals were carnivorous, most varieties of animal and plant tissues were suitable for human consumption and would augment or eventually replace the Earth grains they had brought along. There was nothing in the report to frighten—or even seriously worry—any would-be colonist.

"Let's have the visuals," said Devlin.

On the main screen appeared an unsteady picture of the planetary surface from an altitude of fifty thousand feet. The probe's vision pickup was directed forward, so that the picture showed half-black and half the dazzling white of the cloud carpet.

The vehicle was shedding height rapidly and the cloud layer began to show graduations of light and shade and to take on a three-dimensional aspect. Individual clouds were sliding over the horizon and whipping past the probe and suddenly it was through and over the sea at three thousand feet and approaching the largest coastal town. Devlin had a glimpse of buildings and a park below rushing past—then the probe was close to the ground and crossing above a road with a moving vehicle in it. He saw small animals running, vegetation beautifully formed and colored and hugging the ground for protection against the high winds—and the screen went blank.

MINOR MALFUNCTION IN PROBE CONTROL SYSTEM DURING LANDING. MAJOR MALFUNCTION IN VISION PICKUP CAUSED BY HEAVY LANDING. OTHER SENSORY SAMPLING AND COMMUNICATIONS SYSTEMS REMAIN OPERATIONAL.

WITHOUT being asked, Patricia tapped for a slow playback of the sequence covering the flight over the town and the close approach to the ground. As the images were crawling slowly across the screen she gave an uncomfortable laugh and said, "I know how this thing works—

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I could almost build it. That instructor's knowledge is in my mind. Is there such a thing as retroactive telepathy?"

"Maybe," said Devlin dryly, "she *is* haunting the place."

"Maybe," Patricia replied with a shiver, "she is haunting *me*. Is it possible that–"

Devlin said firmly, "Concentrate on the display and freeze the picture if you see something you think is important. Look, we're above the town now and crossing the park–"

The streets were broad, well-planned and pleasantly decorated with vegetation. Architecture tended to be functional, squat and with a firm grip on the ground–nothing seemed to rise higher than four stories and the small, shutter-fitted windows and curved roofing were protection against high winds. In the center of the park the object Devlin earlier had imagined to be a silvery dome was now revealed as a gigantic sphere, tarnished by time and weather and the heat-discoloration of re-entry. Devlin wondered if the descendants of the Earth colonists would put a park around their ship in memory of where they had come from, if things worked out right and they were able to take root here.

Even with maximum magnification he could not resolve the images of the beings in the streets.

"It's a nice place," said Patricia as the probe dropped lower above the wooded country beyond the town. "We could do much worse. And we can always land well away from the other colonists' towns. The planet is almost empty, and by the time they discover us we may have discovered a way of making friends with them."

"That's true," said Devlin. "Unless they find the probe and deduce its purpose and organize some kind of defense. We'll need a long time to decelerate and return here, remember–seventy, maybe, eighty years–and they'll have plenty of time to prepare and to fill some of the empty spaces with their kind."

"Defense? But we're not attacking."

"They don't know that."

She was silent for a moment, her expression troubled. Then: "Maybe they won't find the probe. But I'm worried about the driver of the vehicle it passed over . . . Here it is now."

The road was a gray diagonal bisecting the screen with the wheeled vehicle hurrying along it and away from the probe, which was overtaking but increasing its lateral distance as it dropped lower. Their view moved from the three-quarters rear aspect to almost a side elevation before intervening trees threatened to hide the vehicle from sight. Simultaneously their fingers stabbed toward the Hold button and collided above it. They began to laugh and Devlin tapped for full magnification.

They stopped laughing.

The image was quite sharp. It showed a sturdy four-wheeled vehicle with a transparent canopy with three beings–two adults and a child–inside. More than enough of their bodies was visible to make identification positive.

They belonged to the same species which, during Pass Five, had made three attempts to blow the Earth ship out of the sky.

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XIX

"I KNOW enough—at least I remember enough—to be sure that we won't survive at all if we go on," said Patricia angrily. "We've got no guarantee that Target Ten's system will even be habitable, and by the time we get to Eleven—if we ever get to Eleven—the ship will be three-quarters dead so will half the people in it. I do know enough," she raged on, "to know that I don't know enough to carry out effective repairs on anything but the simplest systems. That girl was a programer, not a team of technicians!"

She was angry because they had spent several hours arguing in circles and now they were going around the same old circuit yet again.

"I still think this is too important a decision for two people to take," said Devlin stubbornly.

Shaking her head impatiently she said, "I've already explained why they shouldn't be. If we choose to make this decision by democratic process we will have to wake everyone whose cold sleep resuscitation systems are still operational, explain everything to them, then wait while everyone tries to make up his/her mind. It is hard enough getting two people to make up their minds. Well, isn't it?" Devlin did not reply and she rushed on: "As things are now we have two choices. To go for Target Ten or decelerate for a return here. We have a pretty good chance of making a successful landing here, and a much poorer chance of landing at Ten—if it even has a suitable planet. But if we wake everybody now—think of the power demand, the increased chances of system failure, the drain on consumables while everyone is arguing and trying to reach a decision. If we wake everyone there won't *be* a choice, because the power drain caused by a general warming up—something that's only supposed to happen once during the voyage, during the pre-landing orbit—we won't be able to make it to Ten." She gestured toward the main display and added: "We've seen the figures and we know what will happen. At least *I* know."

Patricia was convinced that she was right, Devlin thought angrily, and he already had proof of how far she would go once her mind had been made up about something—the wound in her cheek, six weeks or nine centuries old, was only beginning to form scar tissue. But his own anger, he realized suddenly, was chiefly due to the fact that he himself knew that she was right.

"At least," he said, "let's sleep on it."

"And have the same decision to make when we wake," she said, with a note of desperation creeping into her voice. "I don't think I could stand that. We won't be any better informed than we are now. I think that we have no choice at all but to decelerate and return for a landing here and you know it!"

"I know it," said Devlin. "I always have."

But his strongest feeling as he depressed the big red Mission Termination button was not of anger at being bested in an argument or fear of the consequences—it was simply one of relief followed by a feeling of complete anticlimax.

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POSSIBLY the highly complex brain of the ship was aware of the drama of the situation. Perhaps that inhuman mind and cold, metallic and aging body knew a sense of exhilaration that her journey's end was a relatively short time away. But the sole outward indications she gave were the constantly changing data displays on the main screen, telling of new systems being checked out, predictions regarding power consumption during the decades of deceleration that stretched ahead. Gradually Patricia's and Devlin's eyes and minds grew tired of watching displays and began to wander toward each other.

"I'm sorry for being nasty to you back there," Patricia said after a long and obviously worried silence. "It was just that you seemed to be so—"

"Stupid?" asked Devlin, smiling. "Don't worry about it. If you had been the one who was dithering I would probably have hit you with the same arguments. It's just that I'm the worrying type. I like to be as sure of things as possible. For instance—right now I'm thinking about the cold sleep cubicles and the number of exercise-only awakenings scheduled before we arrive back here. I'm especially concerned about the power drain and the increased probability of casualties through component failure that even a small and periodic power demand could cause. We're now pretty sure that no physiological or memory damage will occur during an extended period of cold sleep, so I was wondering if it were possible for you to program us for just one more awakening—the final one."

She nodded and smiled, yet somehow managed to look even more miserable. Devlin released his straps and moved to the edge of her couch.

He asked, "What's really bothering you?"

She gripped his hands tightly, but refused to meet his eyes as she said, "My—my memories are bothering me—and I'm also afraid of what will happen after we land. But right now the problem is my memories. I can remember being some very bad people and being in a lot of bad situations. I'm afraid that I may have experienced too much—that I'll be all used up emotionally and that nothing will be new anymore—"

She stopped and Devlin had the impression she was at a loss for words to express all she felt and was going to cry.

He said, "You experienced nothing during cold sleep—and your memories in biological time are your own business. What you have are simply memories. I have some pretty hectic memories myself, but I think we've established that they're the product of an intensive education program. Our mental notebooks are full to bursting. We are hot on theory and in a very short time, say four hours' normal sleep and a couple of days in pre-landing orbit, we will be able to get together and compare notes."

Gently he lifted her hands and put them behind his neck, then forced her to look at him. He added, "We are exactly the same people we always were—perhaps more so."

HE THOUGHT of Brother Howard and the things both he and

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Patricia had been told about the colonization project and about the things he must have been told but could not now remember. The dream of the Brother talking seriously to him—without making a sound—that, surely, had been his subconscious trying to break a post-hypnotic command not to remember when he awoke.

But the command had not forbidden him to remember the incident when he was asleep and now Devlin had developed a highly retentive memory regarding his dreams . . .

He said abruptly, "When next we take our normal sleep, I don't think we should meet again before cooldown. I want to concentrate all of my thinking on the Brother, because we still have an awful lot of questions and that way I may be able to dream the answers. Do you remember how he talked—in broad, philosophical terms—about seeding the stars?" he went on. "Could it be that the reason you remember only feminine dreams and I the masculine is to make sure that when we arrive the seeds will germinate properly?"

As she nodded he remembered something else the Brother had told him—an old parable about seeds, some of which had fallen on stony ground, others among thorns and the rest on fallow soil. In that parable there had been three options, but here he could see only the stony and perhaps nonexistent ground of Targets Ten and Eleven, which they might never reach—and the thorns of Nine. Among the thorns they might at least take root for a while before being choked off. Among the thorns they stood a fighting chance—if sheep could fight. The ship's personnel, he remembered had been carefully chosen from among Earth's sheep—not the wolves.

She must have read his thoughts from his expression because her fingers curled gently around the back of his neck and she began caressing the area behind his ears. "Don't worry about it," she murmured. "We've taken the decision and now there is no point in worrying." Slowly but firmly she pulled his face closer to hers. "I'm trying to reach another decision about whether or not to break a very strict ship's regulation . . ."

They took a long time considering that regulation, which they seriously bent but did not actually break. When they finally forced themselves apart the main screen had ceased its continuous data presentations and was displaying one message only.

ESTIMATED TIME REQUIRED TO PRE-LANDING ORBIT INSERTION AROUND PLANET THREE OF TARGET SUN NINE IS EIGHTY-SEVEN YEARS SIXTEEN DAYS THREE HOURS APPROXIMATELY. ALL CONTROL, GUIDANCE AND NAVIGATIONS SYSTEMS OR BACKUP SYSTEMS FUNCTIONING. REACTION MASS FOR PLANETARY LANDING SUFFICIENT FOR DIRECT DESCENT ONLY. INSUFFICIENT FOR MANEUVERING IN ATMOSPHERE.

Deliberately they did not discuss the data or say anything at all until they parted at Patricia's cubicle and then they simply kissed and wished each other good night.

BUT DEVLIN found it difficult to focus all of his mind on Brother

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Howard while he composed himself for sleep. Even when his fitful dozing gave way to the shallows preceding deep slumber, the wish-fulfillment dreams with the image and sound and feel of Patricia in them kept getting in the way as she demonstrated various delightful ways of breaking that ship's-regulation. In spite of these interruptions he finally did begin to dream about the Brother, then about Patricia and himself in a room with the Brother, who was seated beside the old psychologist's wheelchair, facing them.

The psychologist was also talking to them silently, but suddenly the sound came through . . .

". . . You will be given a strong, drug-reinforced post-hypnotic command to forget everything that you will be told during this session," said the frail old man in his tremendously deep voice. "Whether the command will hold over the time-scale we will be dealing with is another matter. We sincerely hope that it will hold long enough, at least, to protect you from serious mental disorientation, because tied to this command is an even more important one designed to force you to recall your cold sleep dreams in chronological order. You will have enough to contend with, psychologically speaking, without having to handle an intensely vivid dream life which is apparently running backward.

"But before the Brother tries to explain what is likely to happen to you, let me assure you that the hypno-conditioning is not intended merely to hide the truth from you. We are trying to protect your minds from we are not sure what and prepare them for the same thing. Perhaps there is no need to do this. Perhaps the thing will happen to us naturally, when the time comes, as reproduction. Perhaps we are wasting our time by trying to teach caterpillars to think like butterflies. The truth is that we just are not sure what the truth is, and we are trying to hedge our bets.

"Too much talking tires me." The old man was tapping the control studs on his wheelchair and moving toward the door as he added: "The Brother will try to explain it all to you—without becoming too philosophical or religious, I hope. When he is finished I shall return to reinforce the hypnotic commands and, of course, to wish you good luck."

When Brother Howard began to speak it seemed as if he were simply going to repeat their first project orientation lecture. Still without telling them whether it was the first, forty-second or only interstellar colonization vessel, he briefly described the ship and its systems, its capabilities and its projected course. It would be powered by a low-thrust drive which would accelerate it over the space of several decades to a velocity roughly one-quarter that of light. The more powerful reaction engines would be used only once—to land on the target world. Maximum safe duration for the voyage would be one thousand years, so that their effective range

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was approximately two hundred and fifty light-years . . .

It was a dream, Devlin knew, but he could not stop himself from dreaming again the shiver of awe and wonder he had felt then and his feeling of sympathy for the Brother, who, for some reason not yet plain, was unable to accompany them.

. . . Their course, according to the Brother, had been selected so as to make a close pass of ten target stars which were approximately in a straight line within their two hundred and fifty light-year range. The majority of the solar systems concerned were thought to contain habitable planets, but the optical range was extreme and only a few might do so. Should the ship approach an unsuitable solar system it would use the gravity of the system's sun to warp its course so as to direct it toward the next target system with no wastage of fuel. When a system with a suitable planet was found, the mission termination button would be pressed and the ship's computer would take them into pre-landing orbit and ultimately touchdown.

It was at that point that Brother Howard diverged sharply from the early and more familiar lectures . . .

XX

"I have described, not for the first time, how you will go," Brother Howard said briskly. "The reason why you are going is not so simple—and the reason why you people in particular are going is the most complicated of all.

"To you the reason for leaving this place must seem obvious," he went on, dividing his attention between Patricia and Devlin. "This is a rotten, violent and overcrowded place and no sane person with a choice would want to live in it. The not so obvious reason is that you and all the rest of us are being acted on by steadily increasing sociological, cultural, moral and economic pressures—you name it and I can tell you exactly how you are being squeezed. It is therefore probable that you are leaving because you have no choice!"

His voice had risen steadily in volume and his eyes, Devlin thought, seemed to reflect a mixture of anger and confusion. The Brother had never looked or sounded as wild as this before and Devlin reminded himself that not all of the city's madmen were Maxers or teenage citizens.

"Let us go back to your analogy of the fruit-bearing planet," Brother Howard continued in a quieter voice. "The analogy is not perfect, as you know, because this planet-sized rotten fruit has nowhere to fall in order to germinate and restart the growth cycle. Instead it is being compressed on one side by rapidly diminishing resources and an exploding population on the other. The result will be that the seed contained within it will be expelled like a stone from a rotten plum—and the purpose of this project is to direct the seed toward fallow ground."

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He took a deep breath, then went on quietly, "Naturally we are making a big effort to ensure the success of our project. But we can never be sure of whether the effort and sacrifices are necessary or whether, if our particular group of talented people had stayed at home and enjoyed the various pleasures of our society, the project would have been launched by a completely different set of people using entirely different methods. However, I am fully convinced that if something is destined to happen, then happen it will. Seeding must occur, and soon—I have special knowledge, you see, which makes me absolutely sure of this. I am also convinced, as are most of the others connected with the project, that God or Fate or the evolutionary process helps those who help themselves.

"Our main worry," he added, and the worry was evident in his voice as well as in his expression, "is that we cannot know for sure whether we are helping or hindering."

Devlin looked at Patricia, but all of her attention was on the Brother and there was no way of telling what she thought about this peculiar confession.

"I wouldn't dream of confusing and frightening you like this," he continued, "if you were intended to remember this interview. However, there is no need to be afraid for your physical well-being. The danger, the real suffering and confusion, will be mental rather than physical, and there is little we have been able to do to prepare you for it.

"But before I go into the details of what we *have* done, and why, I shall try to dispel some of your present confusion by telling you how I became involved."

According to the Brother the project had its real beginning about a century and a half earlier when mankind, having slammed the door into space some forty years previously, was beginning to open it again and look outside. Scientific advances in the interim had provided methods of space travel that were much more economical than those of the first space age, as well as opening up the possibility of interstellar flight through the development of hibernation anesthesia techniques.

One of the projects initiated at that time was aimed at sending a low-impulse drive ship containing a volunteer astronaut in cold sleep on a cometary orbit that would return it to the vicinity of Earth in one hundred and three years.

But once again the public lost interest in space flight and in hibernation anesthesia, because even then the future promised to be an unpleasantly crowded and polluted and vicious place. Sensible people preferred to live out their lives in the present rather than transferring a large portion of them into this rather frightening future. But the volunteer astronaut, like most people who volunteered, was not very sensible and did not really think about the kind of Earth he would be returning to. Nor did he realize that,

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while his physical condition upon resuscitation would be perfect, his mind would never be the same again.

"... A lot of time and effort and money had gone into the project, however," Brother Howard went on cynically, "and one of the project psychologists, Doctor Martin, was so interested that he undertook a longevity treatment in order to be around to see the end result. The treatment, although still experimental, was effective in that it conferred long life but not eternal youth.

"Because Doctor Martin was not a normal person," the Brother continued, "and because he was brilliant, dedicated and incredibly patient, he did not give up on the only cold sleeper to return after an extended period in space and gradually he coaxed him back to sanity. It required many, many years of constant attention because the returned astronaut, by the generally accepted standards of the day, was hopelessly insane. In the long process of effecting a cure Doctor Martin discovered what exactly had been going on in the man's mind while all of his bodily processes—except those of mentation, obviously—had been halted, and together with his patient they formulated theories to explain it.

"But my return to sanity was not one hundred per cent complete," the Brother added dryly. "As a result of those cold sleep experiences I became convinced that I had had my nose rubbed very firmly in a form of afterlife, and I'm afraid that I caught a severe dose of religion."

He looked from Patricia to Devlin, studying their expressions. Then he said, "Relax, I'm still not trying to convert you. But I must give you some idea of what to expect, so listen carefully ..."

The Brother's experience in cold sleep had been frightening, painful, stimulating and confusing, with confusion predominating. He had been assured that nothing at all would happen during cold sleep and that he would be awakened without any apparent passage of time. Neither he nor the project medics had expected him to dream, continuously and vividly, throughout his century-long voyage.

Even the pleasant dreams had been frightening because of the confusion and disorientation caused by their apparently running backward. Incidents were experienced normally, but when he dreamed a person's lifetime the incidents were not in chronological order. He would dream a person's entire life-history, complete in every thought and detail and feeling and then, without warning, find himself the same person's infant father an instant after the aged son had died.

He kept dreaming farther and farther back in time, of people and places about which he could not possibly have had knowledge. The dream lives became shorter and more violent. Some of them did not even involve human beings. And when he was resuscitated his mind was filled with the

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pains, pleasures and confusion of countless lifetimes and he was incapable of forgetting any of them.

All of the lives and, more important, all of the deaths were there as fresh in his memory as if they had happened only a few minutes earlier.

It was a miracle that old Dr. Martin, who had been young Dr. Martin when Howard had been cooled for the trip, had been able to return him to any semblance of sanity. But the psychologist had managed it, in part, by providing an explanation for what had happened to him.

Martin had suggested that when a man—or men and/or women—were removed from their home planet for extended periods of time while being subjected to reduced temperatures a process occurred which had the effect of making them seeds—or potential seeds of their race. The process was psycho-philosophical rather than physical.

Like certain plant seeds and bacteria which were capable of surviving for extended periods in Arctic conditions and then of reproducing themselves, the human equivalents were perfectly preserved in cold sleep, with none of their functions impaired. A major difference was that the human seedlings possessed minds and these, apparently, were even more important and deserving of preservation. But it was not simply the minds of the individuals concerned that were preserved, the process triggered off by time and reduced temperature had the effect of stimulating what amounted to the racial memory.

The cold sleepers became the seeds of humanity—all of its knowledge, experience and achievements since its earliest beginnings.

"In effect," the Brother went on, unable to hide the wonder and excitement he was feeling, "each man and woman has available to himself/herself the memories—that is the total knowledge and experience—of every ancestor of the same sex, and this would include experiences these ancestors shared with contemporaries with whom they came into contact as far back as prehistoric times. Such memories could not be passed from male parent to male offspring, or female to female as the case might be. The dream material made available during cold sleep comprises complete lifetimes. If racial memories were inherited from the parents they would begin at conception but no memory belonging to a parent would become similarly available to descendants after the birth of the final offspring.

"Obviously there is a sex link—otherwise why couldn't males experience female dreams and vice versa? But according to the doctor there is another and much more important process at work. This is the release of information recorded and stored in the large unused portion of the human brain, which is the mental component of the human seedling. Since the brain is the only organ

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in the human body that grows without regenerating itself, this explains why complete lifetimes can be remembered.

"The reason for dreaming about people who could not possibly be ancestors is more difficult to explain, but Dr. Martin has covered even that . . ."

One of the psychologist's pet theories as a young man had dealt with ghosts and similar nonmaterial sound-sight-touch manifestations. He had become convinced that ghosts did not exist, but he did believe that when an event involved considerable amounts of human pain, pleasure, fear or any other strong emotion, the associated mental radiation was absorbed by material in the area —which would later become the scene of the so-called hauntings— and would be made available to anyone who visited the place later and who was sufficiently sensitive to be a receiver for the playback.

When the Brother had reported on his dream lives experienced during a century of cold sleep, Dr. Martin had extended and modified his theory.

According to the psychologist, mental radiation was absorbed and recorded by all forms of organic life and the recording equipment increased its sensitivity and efficiency as the organic life in question developed intelligence. No thought or sensory impression, no matter how faint or distant in time was ever completely lost. It was stored, not in the crude, electro-chemical fashion used by the conscious mind, but on a sub-molecular level which enabled it to accommodate the vast quantity of material necessary for the retention of a racial memory.

Martin held that any given person was composed of atoms or molecules—the organic building blocks—which in the recent or distant past had belonged to the structure of another person or had been briefly in contact with another person's organic material through ingestion or assimilation into the tissues. The transfer of information to the hyper-sensitive recorder in the brain might even have occurred through inhalation of impurities while sharing public transport, possibly even through communal proximity.

Martin had been unable to establish either the degree of sensitivity or the range of the racial memory recording units in Brother Howard's brain, but he had concluded it was not limitless.

"To express it as simply as possible," the Brother concluded, "no single person is carrying all of mankind's history in his afterbrain. But the ship will contain two hundred long-term cold-sleepers and the doctor is convinced that half that number, considering the present-day mixing of racial types, would among them take away a record of every thought, emotion or sensation ever experienced by thinking creatures on this planet."

A long, uneasy silence fell after the Brother finished speaking. Devlin felt excited and impressed by the scope of the psychologist's concept, but he still thought it

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incredible. Patricia must have been thinking along the same lines.

"I can't believe—all that," she said apologetically but firmly.

"Not now, naturally," said the Brother. His voice held a tinge of compassion. "After your third or fourth awakening you will believe, except that our conditioning will keep you from remembering this particular session. By now you are realizing that if you were allowed to remember this you, and all the other colonists, would resign from the project."

Devlin laughed politely. He said, "In a project as important as this, one with so many philosophical implications, I still don't know how you can be sure that you're picking the right seeds for your pod."

"The simple answer," replied the Brother, "is that we are not sure."

"Oh," said Devlin.

Brother Howard shook his head. "We are caterpillars trying to think like butterflies. The process of seeding may be as natural an event as the sun's coming up, but in this case it is still an event that requires the combined knowledge of all the hard and soft sciences. Doctor Martin and myself are responsible for selecting the seed. A lot of time and effort has gone into the design and construction of your ship and we know it will work—but the business of seed selection is scaring us sick.

"A seed should be capable of survival," he went on. "Fine. But do we select our most aggressive, adaptable seedlings who will establish a bridgehead and hold it against all comers? Or will we export our philosopher and artist seeds who between them may be incapable of growing a potato? Or a mixture of both which might result in the seeds destroying each other? All this is an over-simplification, you realize, but you can appreciate our dilemma. Finally we decided to take the easy—and perhaps cowardly—way out. We felt that if the seeding were truly to become an event as natural as childbearing the seeds themselves should be aware of the process. So we began to look around for personality types who were trying to expel themselves or who wanted to be expelled. We found that the strong-minded, aggressive, highly intelligent and resourceful men and women, the kind who to our minds would have made the best colonists, had adapted to present-day society and, under deep probing, were not really interested in going.

"The group who really hated Earth and who desperately wanted to escape comprised more than ninety per cent of the world's population," he concluded. "That's right—the sheep! We didn't even have to go outside the city to find enough candidates."

After a moment's silence Patricia said quietly, "That sounds like the right choice. Ordinary, average, peace-loving people are in the majority. They always have been."

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"Yes," replied the Brother. "The highly intelligent and aggressive types are responsible for much progress, but it has been progress without stability. The sheep will move ahead more slowly and evenly—as long as they don't land among wolves."

"I see," said Devlin, then added: "Don't worry. I, too, think you made the right choice."

"Kind of you to say so," said the Brother dryly. "Another worry has been how you people as individuals will react to becoming the repositories of this store of racial experience. From first-hand knowledge I can assure you that the process is anything but pleasant, and we have tried to devise ways of cushioning the psychic shock involved.

"Perhaps," he said, going off on a tangent, "a voyage on a generation-ship, with the original personnel and their descendants living out their lives naturally during the trip and sleeping normally instead of going cold, would be easier on all concerned. Maybe that is the way seeding is supposed to happen. But we can't be sure—and anyway, we haven't technical ability or the psychological control capability to produce that kind of seed pod. All we can do is to try and make the cold dreams a little easier for you to take.

"During the training sessions that you will be allowed to remember we have told you lies, half-truths and generally planted impressions that are nothing but red herrings. Four periodic awakenings to reinforce and exercise the mind and body, for instance, are a case in point—remembering will *never* be a problem where you are concerned. Hints dropped about the *necessity* of dreaming, when you will not be able to stop doing it are another—as are oblique references to the use of new psycho-drugs that will make you suspect that the whole business is simply an elaborate simulation. All this lying and misdirection has been to enable you to assimilate the sharp and intense and extremely confusing race memory data without its driving you insane."

Devlin nodded. He no longer thought the Brother a religious fanatic, but neither did he feel particularly reassured. He said, "Surely there are drugs available that would cushion these shocks. They could be injected immediately preceding the awakening and they would dull the initial sensations so that—"

"No!" said the Brother sharply. "The seed pod is a product of the race's technological achievements—but the seeds themselves we are afraid to touch in case we adversely affect them. Drugs might deteriorate over such a lengthy period or have a damaging effect on the recall process. So you are going out untouched, medically speaking. The conditioning process, which we will begin shortly, is psychological and aimed at controlling your dream recall by non-material means. It is being done so that you will remember, or dream, the earliest episodes first and so that the

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racial memory material will be presented more slowly and in chronological order. We hope that the conditioning will prevent all of your racial memories' being made available during your first cooldown—and that it will enable you to retain your sanity after the later awakenings. But we can't, of course, be sure of anything."

Another long silence was again broken by Patricia, who said, "We both knew that there would be risks."

"Yes," said Devlin, wishing that he could feel as calm as she sounded. "You had us worried for a while—we thought we'd fallen among religious fanatics. I realize now that while this thing has all sorts of philosophical implications it has nothing to do with religion or the afterlife."

"No?"

"Not for me—not now," replied Devlin. "Of course, I may not have thought deeply enough about it."

"You haven't," said the Brother, "and I'll admit that in the objective sense I may not have undergone a religious experience. Much depends on your point of view and on how your parents brought you up to regard such things. I found that my after-brain recorder had been switched on and its return to Earth gravity and temperature did not seem to be switching it off. I kept assimilating impressions from everyone around me. So I became very understanding.

"Mostly, though, I kept remembering the lives of people who had died long ago. They were a pretty varied bunch, with good qualities and bad qualities in combinations that made their lives quite recallable. They are all here, complete in every thought and feeling." He tapped the side of his head, added seriously: "Everybody suffers—but nobody dies."

"But surely," protested Devlin, "they are only the memories of people, not the people themselves."

The Brother shook his head. He said, "Think of it in this way. When you go to sleep at night your life is switched off—you die. When you wake in the morning you may clearly remember your life of yesterday, but it is only a memory. You will better understand what I'm talking about when you have experienced your first few cold sleep memories. My point is that everyone who was ever alive will still be living in the minds of you colonists—and as for the religious implications—" He paused for a moment as the door opened and Dr. Martin came in. Then Howard went on: "I have a purely personal view regarding the meaning of my racial memories, you understand, and it's one Doctor Martin does not agree with. The vast majority of these lives are recallable because there is much in them that is interesting and valuable. But there are other lives which are so twisted, so violent and unpleasant in one respect or another, that nobody would want to recall them even in part. So there is this mass of material that will rarely, if ever,

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be recalled. It belongs to people condemned—by their own acts, you will say, and not by any higher authority—to the outer darkness of the forgotten—to Limbo. As far as I am concerned the religious implications are clear."

Dr. Martin rolled his chair behind the desk, and the Brother stood up and solemnly shook hands with Patricia and Devlin. He smiled and said, "The doctor here describes me as a lapsed atheist, whatever that means. However, now I have to tell you that, following this conditioning session, you will be cooled and stored to await transfer to the ship. We will not meet again—and I want to wish both of you good luck and a safe landing."

As he turned to leave, Devlin said, "Wait, Brother. I'm still too confused by all this to say thank you and really mean it. But I still think it unfair that you people, who have done all the real work, have no chance of getting away. Surely we could make room, or do something to—"

Brother Howard held up his hand.

"With the problems you are shortly going to face, Doctor," he said dryly, "trust you to worry about us! But there is one thing, just one, you can do: remember us in your dreams."

XXI

THERE were no colonist or crew awakenings while the ship killed its tremendous cruising velocity and began the return to Target Nine, so there was plenty of time to remember and dream. The dreams were as vivid and complete as before, but now Devlin was aware of what was happening and was able to integrate them with his own memories and no longer felt helplessly imprisoned by them, as in a nightmare.

He became more and more unselective regarding the material available to him. He learned that pain as well as pleasure were a part of every worthwhile life and recalled people who were truly great to everyone but themselves and others whose greatness was known only to a few close friends, or perhaps to only one other person. He also learned that very few lives were uninteresting or unworthy of remembrance and even fewer completely valueless.

To understand all was to forgive almost all, and Devlin's understanding—or his education, as the Brother had described it at a time when he did not know what was involved—was complete.

He brought back people he had met in his own lifetime—colleagues at Sanator Five, young Tommy Bennett and his father, Patricia's father, Dr. Martin and Brother Howard. He had met them briefly or for extended periods of time, but everything they had thought and felt until that point in their lifetimes had made an impression on his after-brain and was available for replay. Each of them lived again in his memory, their beings so sharp and vivid and utterly complete that they lived, period.

He could understand the Brother's point of view about an afterlife, as well as many other things.

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Devlin *was* Brother Howard as an infant, a toddler, a young man rebelling against the constraints of highly moral parents who in their turn were overreacting against the increasing permissiveness of their society. He was Howard as a test pilot and an astronaut under training; as Howard had walked the awful emptiness of Mars; as a helpless cold sleeper reliving, in savage and confusing detail, some of the lives that made up the race's memory.

He was Brother Howard when they had first met in the house of Bennett, a project worker and when Howard had decided that the doctor and probably his girl friend, would qualify for the mission. As Howard, Devlin had decided that all of the others would qualify, because he alone on Earth had the ability to know a man completely. He had been responsible for the selection of all the male project personnel and colonists while Dr. Martin, using more mundane methods, had been responsible for the screening of females.

As Brother Howard, Devlin was aware of seeing himself as another had seen him and of the peculiar mental double-image that was his own recollection of his past life superimposed on the one detected by the Brother.

But the subjects for Devlin's recall included Howard's contacts on the project, men who knew the workings of the ship inside out and from preliminary design sketch to finished and tested hardware. Devlin knew he was only a seed in a fantastically sophisticated metal pod and that the pod was beginning to deteriorate seriously. He thought that it should be possible for the seeds to help sustain their own aging and withering pod . . .

He was still investigating that possibility when he was awakened.

GOOD MORNING DEVLIN. SHIP STATUS ONE THOUSAND AND THREE YEARS INTO MISSION. SYSTEMS AND/OR BACKUP SYSTEMS FUNCTIONING AT LEVELS ADEQUATE FOR INSERTION INTO PRE-LANDING ORBIT. SHIP PERSONNEL CURRENTLY AWAKE–TWO. IDENTITIES PATRICIA MORLEY AND JOHN DEVLIN.

THERE were no further messages on the display, Devlin noted as he began exercising. Patricia had said that she would erase the useless reminders about exercising and remembering as a means of saving ship's power. But the single message had told him enough, and his impatience made him complete the exercises while on the way to the control center. Patricia, who must have been fractionally less impatient, arrived there a few seconds later.

With fast, expert movements they called for the situation report and read that the ship was closing the target planet and estimated just under five days to pre-landing orbit insertion. All four of the mission termination probes, the most highly sensitive and complex the ship had available, had already been launched. One had taken up a surveillance orbit and was transmitting data on all channels. Another had developed a control malfunction while attempting a soft landing and had gone down

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hard. The other two had been too sick to leave the launching tubes.

The ship itself was not sick, just very, very tired. Even so it declared itself capable of landing them safely on their new home.

"Not an ideal home," said Patricia, following his train of thought, "even if we don't fall into a clump of thorns." She gestured toward the surveillance probe's display and asked, "Shall I look for a few less thorny spots?"

Devlin shook his head. "Not yet, if you don't mind. Will you help me with the ship's personnel status board? At last report there were twenty-three cold-sleepers in malfunctioning cubicles which, while capable of preserving them, were no longer able to complete resuscitation procedure. I've been thinking about that problem and dreaming some of the people who might have been able to solve it."

"Me, too," said Patricia. "Some of the engineers were brilliant girls, but they would have needed a lot of skilled help, special equipment and a lot longer than five days to put it right—"

She broke off as the display announced that seventy-eight of the two hundred-odd remaining sleepers were likely to stay in that condition permanently.

DEVLIN stared disbelievingly at the figures, his mind reacting to the disaster they represented.

He asked pleadingly, "Is there no chance of repairing the faulty resuscitation equipment? No chance at all?"

"We know what to do," said Patricia gently, "and perhaps if we resuscitated enough of the other sleepers, they might have dreamed enough about the project personnel to recall what must be done. But they were not aware of the problem, remember, and would only dream about the project by sheer luck. Too, we don't have the time or the special equipment needed for the job. You know that, don't you?"

"I know it," said Devlin. "I was just hoping you would come up with an idea."

In a kind of agony he thought of the people who would die as soon as the ship landed and the slow, uncontrolled warmth of the planetary atmosphere began to seep into the ship's space-cold interior. At present they were in cold sleep, not technically alive but still dreaming lifetimes and experiences not their own—so neither were they dead. Was it right that he should condemn them to death—and lose so much of his race's memory and experience—by landing on this world? Would it not be better to use the last of the ship's propulsive power to shoot it out again into interstellar space, where the cold would ultimately allow everyone to dream forever about all the people who individually had made up the race of man?

Would it not be better to be a seed that was complete and perfect and never fell to ground, then one that was weakened, incomplete and probably destined to die before germination?

"No," said Patricia firmly. "Before you could take that decision you would have to resuscitate everyone and ask for a vote. You would *have* to do that."

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Devlin had not been aware that he had been thinking aloud. He said angrily, "We won't be able to count seventy-eight of the votes—remember? What would you have me do about that?"

"I don't know," she replied furiously, "any better than you do. But you could put two of them in the cubicles belonging to Miss Caldwell and Purdy. Those cubicles were switched off to conserve power, remember. They weren't malfunctions—"

She broke off to stare at him while he stared just as wildly at her.

They had the answer.

Cautiously, Devlin said, "Do you think we can manage it in just five days? There are seventy-eight of them, after all."

"But we'll have help," Patricia replied excitedly. "If necessary we can warm as many of the others as we need to help with the transfers. It will be very congested towards the end and the voyage-only consumables will probably run out, but it should work."

"Yes," said Devlin.

He watched her excitement fade as she, too, realized that they had solved just one—the least important—of their two problems. With the exception of Yvonne Caldwell and Thomas Purdy their metal pod would arrive with its full complement of seedlings. But they still had to decide on a landing site; which particular area was least densely overgrown with thorns.

The picture from the surveillance probe, which was capable of virtually unlimited magnification, filled the main display screen.

"Let's deal with one problem at a time," he said. Then, seeing her disapproving expression, he added apologetically: "Despite my extensive education and everything, I haven't changed very much—I still try to put off things."

"Yes," she said and smiled. "And I still seem to be a nag."

FOR the next two days they were kept busy resuscitating cold sleepers, explaining the situation to them and helping them move the people in malfunctioning caskets into those that were still working and lately vacated by other colonists. The solution had been simple and perhaps obvious. By warming up the occupants of functioning caskets, then initiating a cooldown with the casket empty, the people who had been cooled with no hope of resuscitation could then be moved to functioning caskets and warmed in the ordinary way. Care had to be taken to make sure that a partial, and lethal, warm-up did not take place during the transfer and even more care was needed to avoid injury to their ultra-frigid and brittle bodies. But once the steadily increasing number of helpers understood what was required there was little for Patricia and Devlin to do except stay in the control center and prepare for the landing.

"The latest estimate is that everyone will be warm at re-entry minus six hours," said Patricia. "The drain on consumables will be considerable, so we can all expect to be very hungry—but not enough to weaken us physically. All ship's personnel,

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with the exception of ourselves, will take landing deceleration in their caskets, and their displays will keep them informed of what is going on here. People in malfunctioning cubicles will be in the dark, in both senses of the word, and very cold—they will have to borrow a couple of sets of coveralls each if the cubicle heaters are also out. The post-landing food supply and food synthesizers, seeds, livestock breeders, agricultural and construction machinery have been checked. The automatic unlocking systems are functioning and will open these supplies to us as soon as we touch down.

"I wonder," she ended worriedly, "if we will be given the chance to eat a hearty meal before—"

"Several, I should think," said Devlin reassuringly. "Especially if we land in the middle of nowhere."

Patricia smiled and said, "Let's try to find nowhere."

THE post-landing food supply and equipment, designed to enable them to survive for at least two months while they established a base and set up the tissue and plant synthesizers, which would further extend their reserves until the first crops came in, had been locked away during the voyage for obvious reasons. He wondered, remembering his first experience with the pallid, pear-shaped, spindly and highly aggressive aliens, whether a self-guiding nuclear weed-killer would put an abrupt stop to their first celebration dinner on the new world.

They were here first, he thought despairingly, *and we would not trespass if we had any other choice. But could the aliens believe that? Was there any chance of communicating with them and making them understand?*

There was not enough time to do it from orbit and by the time they were down the natives would already have made their decision. There was nothing to do but set down in one of the least densely populated areas and hope that they would not be noticed until they were able to work out some method of communication or, he thought bitterly, a few of the sheep grew fangs.

He was remembering Hawn and the young King and the millions of others who had learned how to survive amid violence and whose knowledge was instantly available should the colonists need it. But were they capable of using such knowledge? And if they did use it, would they ever again be able to think of themselves as sheep?

Would the meek, he wondered bitterly, *ever inherit anything?*

In silence they called up the recordings of their original fly-by, comparing them with current views of the same planetary area. It was immediately obvious that the world had an awful lot of usable empty space, that there had been no major building or expansion programs and that the colony had suffered something less than a population explosion. Radiation sensor data comparisons still showed minor emission, chiefly on the communication frequencies, from the widely scattered housing, and unmistakable evidence of nuclear technology in the towns, which were obviously the manufacturing centers

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for the colony world.

"It isn't exactly an expanding colony," said Devlin, rubbing his eyes. They had been staring at displays for nearly three hours. He added, "I wonder if the planet is only marginally suited to their form of life—as it is to ours. Maybe there are trace elements in the atmosphere that are toxic to them or the heavier gravity makes it difficult to have children—"

"Then we must look for nurseries and schools," she said quickly. "Any place likely to contain children. Even with a totally strange life form you should be able to tell if the children are healthy."

"Yes, indeed," said Devlin and tapped for maximum magnification from the probe's visual sensors. Together they concentrated on holding the images steady, swearing when heat eddies distorted the pictures or the guidance went slightly off to leave them staring at an uninteresting expanse of roofing. They saw many natives, foreshortened except when they were lying down, of all sizes. They were unable to find any structure remotely resembling a school—at least, they could not recognize it as such if they did see one. There seemed to be young ones in the streets with parents, playing on the beaches. All of them appeared to be healthy and very active.

"There isn't anything wrong with that lot." Patricia was frowning. "But I wouldn't say the same for their parents—they are, well, negligent! Some of those children are very small, little more than infants, and they are playing unattended on a dangerous stretch of beach. There should be an adult there to tell them that . . ."

"Maybe," said Devlin, laughing suddenly, "they don't need to be told."

All at once he was feeling great, better than he could remember feeling in any of his lives. He still was not sure that everything was going to be all right.

"What's the matter with you—" began Patricia, giving him a frightened look. Before he could reassure her regarding his sanity, a red light began winking for attention and the image they had been studying blanked out and was replaced by a printed message.

FLY-BY NINE ORIGINAL SOFT-LANDED PROBE MALFUNCTION CORRECTED, PROBE SENSORS REACTIVATED. TRANSMITTING.

DEVLIN said quietly, "They found the first damaged probe and repaired it. I thought that it would be impossible to communicate with them from space, considering the difficulty of matching frequencies and the other technical problems. But they took the easy way out. They studied, repaired and used our own equipment and I'm betting that they were able to build a receiver as well as repair our transmitter. But now we need a fix on their incoming signal," he added, "if we're going to send as well as receive."

Patricia nodded and began tapping instructions, still looking confused and worried. Devlin called up the data arriving from the repaired probe and angled a vision pickup to cover both their couches.

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The picture showed a large room with two windows. It was dark outside. The walls of the room were covered with large charts and simple line drawings, display screens and associated equipment at least as sophisticated as that in the control center. Three adult aliens were watching the probe's vision pickup and the displays, and two of the screens lit suddenly with a picture of Patricia and himself lying in their control couches. The excitement in the room was plain to see.

This is the first time they have seen human beings, thought Devlin. He had seen their species during the near-catastrophic fly-by of Target Five, but at that time the progenitors of the beings on this world must already have left their home system.

"The transmission is coming from an area on the night side," said Patricia, who had been dividing her attention between the main and a side display. "I've called up the visuals recorded during a daylight pass and magnified them. The area is several hundred miles from the nearest town, a clearing in a well-wooded valley, with a few small buildings and a large, steerable dish antenna in it. The interior of the dish is highly reflective. There are surface power lines, apparently, radiating from the installation, and one of them goes to a similar dish about twelve miles distant—"

"Look at this," said Devlin.

The vision pickup on the surface was being directed toward a large and simplified drawing of Five's solar system, with a smaller drawing of an alien placed above the home planet. The pickup lingered for a few minutes on that drawing before moving to another, which showed a spherical ship, also with a picture of an alien close to it, leaving the home system and passing several representations of stars before arriving at system Nine.

"Those charts and that whole installation," said Patricia worriedly, "were not put together overnight. They have been expecting us. At least, they must have decided that there was a strong chance that we would be back and—and—"

"Yes," said Devlin, readying the white plastic boards and stylus which were available for just this contingency. "But they don't know anything about us. I wish I could draw."

NEVERTHELESS he produced a recognizable if crudely executed sketch of the Earth's solar system with a stylized man above the third planet, and presented it to the control center pickup. On the surface there were more signs of excitement and he followed with a sketch of his ship leaving Earth's system and coming to Nine, the only difference between it and the aliens' drawing being the human figure above the ship and the number of intervening stars. The excitement below became intense, then suddenly they all became very still as the surface pickup was directed at another drawing.

It showed a stylized alien lying recumbent and slightly off-center on an otherwise blank sheet.

Eagerly Devlin began to sketch again. He copied as best he could the picture of the recumbent and off-center alien, then added a stylized and recumbent man beside it and

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presented the drawing for viewing.

Their reaction beggared description. It was just possible that the aliens were waving their double-handed arms at him in anger, but he did not think so.

He said, "I think that was the right answer."

"But what was it?" asked Patricia. "A representation of the lion lying down with the lamb?"

"You're partly right," said Devlin seriously. "What they were asking, and what I hope I told them, was that we, too, experienced a lot while we were on our way here. That we are not afraid to lie down unprotected beside them and exchange, if such a process is possible, our respective racial memories while we are asleep. Most of all I think I was telling them that we, too, are sheep."

DURING the fly-by of Five the aliens' reaction had frightened him so much that he had not been able to use his brain properly. They had been so aggressive, so wildly and violently antagonistic, that he had only briefly considered the possibility that there might have been people on that world like Brother Howard, Dr. Martin and the other dedicated members of the project. Perhaps an alien vessel passing too close to Sol a few decades after the colonists had left would have found the humans degenerated even further than in his own day, become even more violent, and reacting in exactly the same fashion as had the people on Five's planet. But now he had begun to think.

He thought about the absence of schools and of what it would be like to have children educated, from a very early age, by dreams which stretched beyond their race's earliest recorded history. He thought of a non-human race sharing a world with his own people, perhaps sharing their racial dreams, and of what they might ultimately achieve together. They were unlikely to do anything violently or in a hurry, because the evidence was that the aliens had made no attempt to grab territory or cover the planet with their offspring. But sometime in the distant future it would be seeding time again, and he was thinking like a caterpillar. Instead he should be thinking like a sheep or, more accurately, a shepherd.

"Any time now," he said confidently, "they should produce another sketch or make some kind of signal that they understand and are—"

"They have," said Patricia, pointing to the other display.

On the half of the world that was in darkness there was a tiny brilliant circle of lights that burned steadily while a larger beacon at the center winked on and off. The scaling grid showed that the circle of beacons was over twenty miles in diameter and that the aliens' communications post was at its center.

Devlin nodded. He said, "We will have to explain the situation to our people in the unpowered cubicles, which will take some time, so you may as well call up the landing program before we tell them the good news.

"Put us down," he added, "in the middle of the welcome mat." ★

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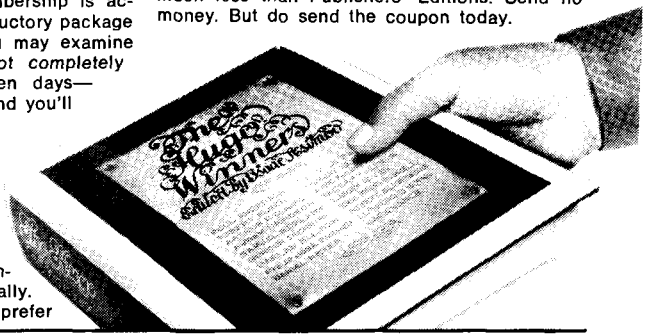

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